SERVICE DATA
FILE NO. 133-079

SUPPLEMENT A

TOSHIBA

STEREO RADIO, RECORD-PLAYER, CASSETTE

SM-3200

ADJUSTMENT OF AMPLIFIER

0 dBm = 0.775 V

Item	Adjusting procedure	Standard
1. Semi-fixed resistor	• Set each semi-fixed resistor to the middle position.	
2. D.N.L	• Terminate the LINE OUT terminal with a 56 k-ohm resistor. • Apply a signal of 1 kHz 0 dBm from the D.N.L INPUT, and make sure that the output level of the LINE OUT is −1.5 dBm ±1.0 dBm. • Change the frequency, and measure the level at each frequency. • Set the input level to 12 kHz −52 dBm, and adjust the semi-fixed resistors (VR609, VR610) to minimize the output level.	• When −52 dB input and 1 kHz reference are used, output level at 12 kHz must be lower than −15 dB.
3. Gain and level meter adjustment of playback amplifier	• Apply a signal of 1 kHz −66 dBm from the record/playback head connecting terminal, and adjust the semi-fixed resistors (VR603, VR604) to obtain the output level of 0 ±1 dBm at the PRI OUT. • Then, adjust the semi-fixed resistors (VR605, VR606) so that the level meter can indicate 0 VU.	0 dBm ±1 dB
4. Playback amplifier frequency characteristics	• With the condition of item 3 above, change the frequency, and adjust the attenuator so that the same level can be obtained at each frequency, and measure the difference between the reading of the attenuator and −66 dBm. • Connect PRI OUT and D.N.L INPUT (by shortcircuiting the pattern) and make sure that the output level at the LINE OUT is 0 dBm ±1 dB when the input level is −66 dBm.	<table><tr><th></th><th>Fe_0</th><th>CrO_2</th></tr><tr><td></td><td>±1dB</td><td>±1dB</td></tr><tr><td>100Hz</td><td>±16.5dB</td><td>±16.5dB</td></tr><tr><td>1kHz</td><td>0dB</td><td>0dB</td></tr><tr><td></td><td>±1dB</td><td>±1dB</td></tr><tr><td>10kHz</td><td>−6dB</td><td>−8.5dB</td></tr></table> * 1kHz reference

0 dBm = 0.775 V

Item	Adjusting procedure	Standard
5. Azimuth adjustment	• Turn the head angle adjusting screw to level the head. Then, playback the 10 kHz signal of MTT −116, and adjust the head angle adjusting screw to maximize the output level.	
6. Recording current adjustment Level meter adjustment of recording amplifier	• Set the slide switch to the record position. • Shortcircuit across the erase head with a capacitor of about 10μF to stop oscillation. • Apply a signal of 1 kHz and −60 dBm to the MIC input terminal. • Measure the voltage across the resistor 10 ohm of the record/playback head, and adjust the volume (VR601, VR602) so that 0.4 mV (recording current 40μA) can be obtained. At the same time, adjust the semi-fixed resistors (VR607, VR608) to obtain the level meter reading of OVU.	Recording current: 40μA ±20% at 1 kHz
7. Frequency characteristics of recording amplifier	• While observing the voltage level across the resistor 10 ohm terminal, set the frequency of oscillator to 12 kHz, and adjust the peaking coils (L601, L602) so that the level can be the maximum at that frequency. In this case, the maximum level is obtained at two core positions in the coil. Set the core to the substrate-side position of the two positions. • Set the level at 1 kHz to 0 dB, and change the frequency. Adjust the attenuator so that the same level can be obtained. • Plot the reading of the attenuator on a chart.	FeO / CrO_2 ±1dB / ±1dB 100Hz +0.5dB / +0.5dB 1kHz 0dB / 0dB ±1dB / ±1dB 12kHz +17.5dB / +13dB * 1kHz as reference
8. Bias current adjustment of bias oscillation	• With the recording position, cut off the input signal, and adjust the trap coil (L603, L604) so that the maximum bias current can be obtained while measuring across the resistor 10 ohm terminal. The core position is the same as in the case of peaking coil adjustment. • The oscillation frequency must be 66.5 kHz ±2 kHz. • The bias current can be changed by the semi-fixed resistor (FeO–VR701/VR703, CrO_2–VR702, VR704). • Next, changeover the beat switch. The change in bias current must be within 20μA, and the oscillating frequency must be 64 ±2 kHz.	• Oscillation frequency: 66.5 kHz ±2 kHz When beat SW is ON: 64 kHz ±2 kHz • Bias current (goal value of adjustment) FeO −420μA ±20% CrO_2 −610μA ±20%
9. Erasing current	• Insert 1 ohm resistor to the earth side of the erase head, and measure the voltage across the resistor, and convert the measured value into current.	Greater than 60 mA

Printed in Japan

SERVICE DATA
FILE NO.: 130-079
REVISED EDITION

TOSHIBA

STEREO RADIO, RECORD-PLAYER, CASSETTE

SM-3200

SPECIFICATIONS

RADIO

Type:	Combination of LW, MW, FM, FM-Stereo Radio
Frequency Range:	LW 150-380 kHz MW 525-1605 kHz FM 88-108 MHz FM-Stereo 88-108 MHz
Sensitivity:	Superior High Sensitivity
Power Output:	r.m.s. Continuous 24 Watts at 1% Distortion (total)
Power Source:	220/240 V, 50 Hz (75 W)
Antennas:	LW, MW Ferrite Core Antenna FM Dipole Antenna
Dimensions:	690 mm (W) x 170 mm (H) x 380 mm (D)

RECORD PLAYER

Type:	Belt Drive, Auto-return, Auto-cut
Motor:	4-pole Synchronous
Speed:	2 Speed (33-⅓, 45 r.p.m.)
Turntable:	30 cm Diameter
Cartridge:	C-29M (MM)
Stylus:	N-14D
Stylus Pressure:	4.0 g

CASSETTE RECORDER

Usable Tape:	Compact Cassette
Tape Speed:	4.8 cm/s
Recording System:	AC Bias
Erasing System:	AC Erase
Track System:	4 Track/2 Channel Stereophonic
Heads:	Record/Playback Head, Erase Head
Fast Forward & Rewind Time:	95 sec. (Max.)

TABLE OF CONTENTS

1. OPERATING INSTRUCTIONS
1-1 FRONT VIEW ····· 3
1-2 BACK VIEW ····· 3
1-3 CASSETTE VIEW ····· 4
2. DISASSEMBLY INSTRUCTIONS
2-1 PLAYER REMOVAL ····· 4
2-2 CASSETTE REMOVAL ····· 5
2-3 CABINET REMOVAL ····· 5
2-4 FRONT PANEL REMOVAL ····· 5
2-5 DIAL CORD STRINGING ····· 6
2-6 STYLUS & CARTRIDGE REPLACEMENT ····· 6
2-7 MISTAKEN ERASURE PROTECTION DEVICE ····· 7
2-8 RECORD PLAYBACK HEAD ADJUSTMENT ····· 7
2-9 PLAYBACK OPERATION (PLAY) ····· 8
3. ALIGNMENT INSTRUCTIONS
3-1 LW ALIGNMENT ····· 9
3-2 MW ALIGNMENT ····· 10
3-3 FM ALIGNMENT ····· 11
3-4 FM STEREO ALIGNMENT ····· 12
4. PARTS LOCATIONS ····· 13
5. PRINTED CIRCUIT BOARD DIAGRAMS
5-1 RADIO UNIT (TOP VIEW) ····· 14
(BOTTOM VIEW) ····· 15
5-2 AF UNIT (TOP VIEW) ····· 16
(BOTTOM VIEW) ····· 17
5-3 POWER SUPPLY UNIT (TOP VIEW) ····· 18
(BOTTOM VIEW) ····· 19
5-4 SWITCH UNIT (TOP VIEW) ····· 20
(BOTTOM VIEW) ····· 20
5-5 LAMP UNIT (TOP VIEW) ····· 21
(BOTTOM VIEW) ····· 21
5-6 PHONO UNIT 《PLAYER》 (BOTTOM VIEW) ····· 21
5-7 PRE AMP. UNIT 《CASSETTE》 (TOP VIEW) ····· 22
(BOTTOM VIEW) ····· 23
5-8 SWITCH UNIT 《CASSETTE》 (TOP VIEW) ····· 24
(BOTTOM VIEW) ····· 24
5-9 MOTOR UNIT 《CASSETTE》 (TOP VIEW) ····· 25
(BOTTOM VIEW) ····· 25
5-10 PARTS CONNECTION ····· 26
6. SCHEMATIC DIAGRAM ····· 27~28
7. EXPLODED VIEW MECHANISM
7-1 RECORD PLAYER ····· 29
7-2 CASSETTE RECORDER ····· 30
8. EXPLODED VIEW PARTS LIST
8-1 PLAYER UNIT ····· 29
8-2 CASSETTE UNIT ····· 30
9. PARTS LIST ····· 33~39

1. OPERATING INSTRUCTIONS

1-1 FRONT VIEW

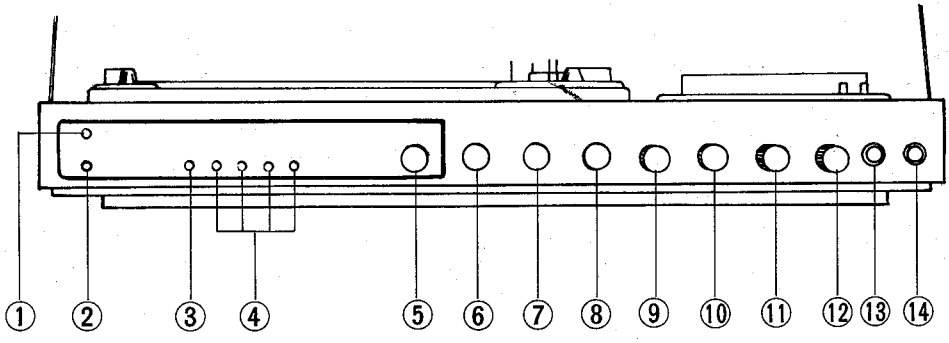


Figure 1

1. Power switch
2. Headphone jack
3. Channel mode switch
4. Band switch (1w, mw, fm, fm-st)
5. Tuning switch
6. Select switch (radio, phono, tape, aux)
7. Bass control knob
8. Treble control knob
9. Balance control knob
10. Volume control knob
11. Recording level control knob (Left)
12. Recording level control knob (Right)
13. Microphone jack (Left) for recording
14. Microphone jack (Right) for recording

1-2 BACK VIEW

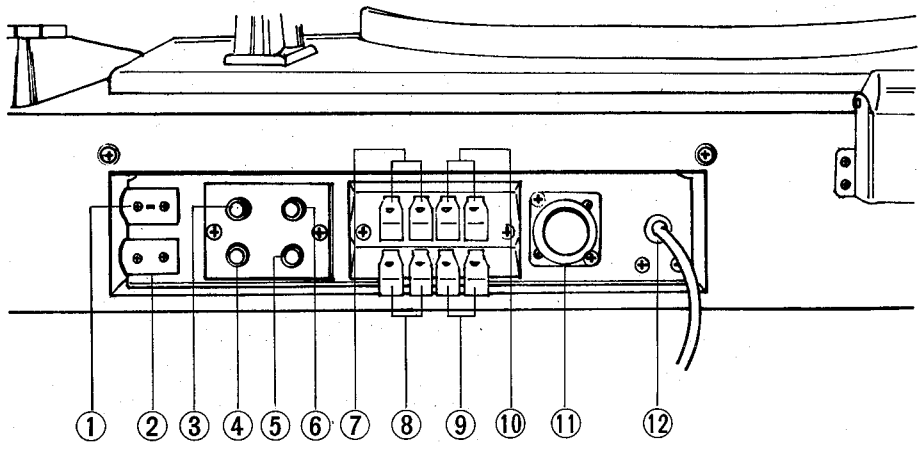


Figure 2

1. FM-Antenna terminal
2. AM-Antenna terminal
3. AUX.IN jack (Left)
4. AUX.IN jack (Right)
5. TAPE OUT jack (Right)
6. TAPE OUT jack (Left)
7. Front speaker terminal (Right)
8. Back speaker terminal (Right)
9. Back speaker terminal (Left)
10. Front speaker terminal (Left)
11. Voltage selector
12. AC power cord

1-3 CASSETTE VIEW

1. Running lamp
2. Cassette up button (eject)
3. Recording button (record)
4. Rewind button (◀◀ rew)
5. Play back button (▶ play)
6. Fast forward (▶▶ ff)
7. Stop button (■ stop)
8. Pause button (▮▮ pause)
9. Tape selector lamp
10. Tape selector switch
11. D.N.L. (Dynamic Noise Limitter) switch
12. Reset button of the tape counter
13. Tape counter
14. Level meter
15. Interference eraser switch

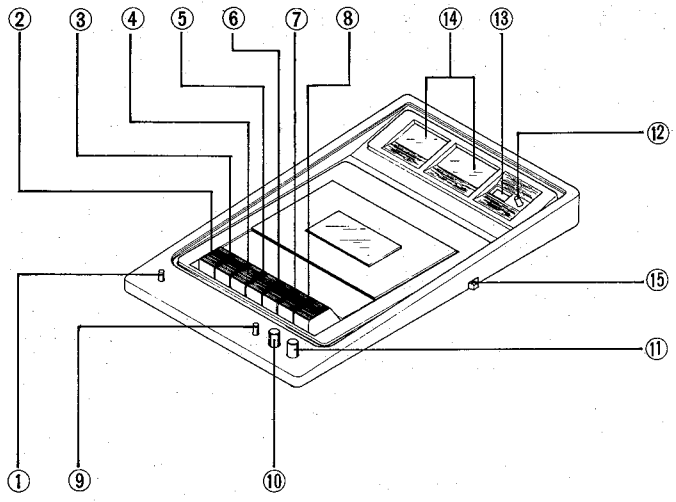


Figure 3

2. DISASSEMBLY INSTRUCTIONS

2-1 PLAYER REMOVAL

a. Lift the turntable sheet and turntable.
b. Remove the five transit screws marked (※) from the player panel.
c. Unloose the one mounting screw marked (★) and slide to the direction of arrow indicating as show in figure 4.
d. Lift up the player panel and disconnect the power line cord connector (4P) and 3P socket connector.

1. Turntable sheet
2. Turntable
3. Turntable shaf
4. Arm weight
5. Arm elevator
6. Arm rest
7. Play/cut lever
8. Power line cord connector
9. 3P socket connector
10. Speed change lever
11. Belt guide
12. Adaptor holder
13. Motor pulley

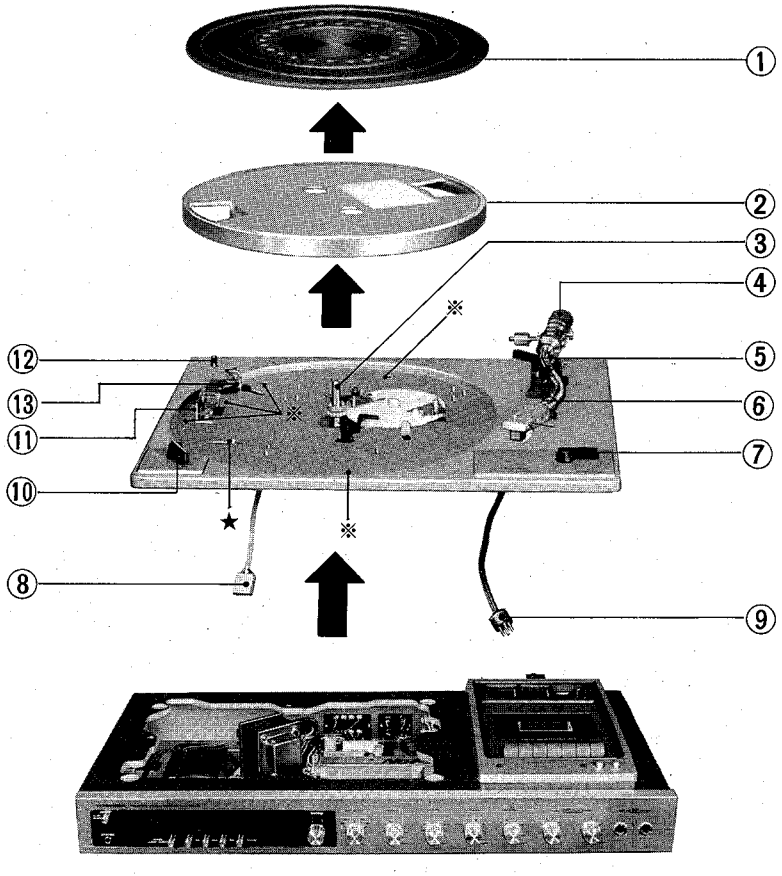


Figure 4

2-2 CASSETTE REMOVAL

a. Remove the two screws marked (※) as shown in figure 5.
b. Take off the two knobs marked (★) and two decoration nuts marked (※) as shown in figure 6.
c. Slide and lift up the cassette body to the direction of arrow indicating as shown in figure 6.
d. Disconnect two 3P socket connectors and one 4P socket connector.
e. Remove the six screws marked (※) as shown in figure 7, and remove the chassis.

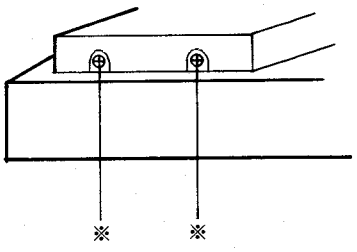


Figure 5

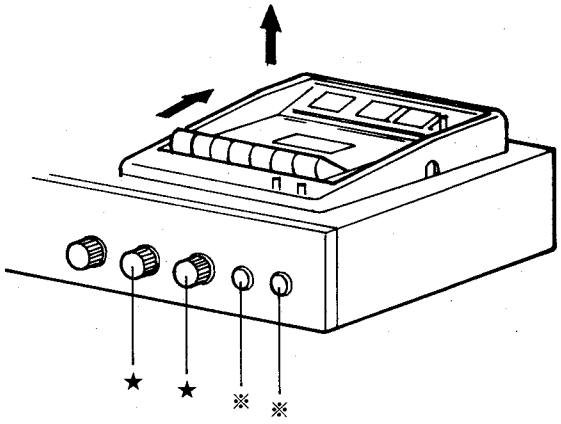


Figure 6

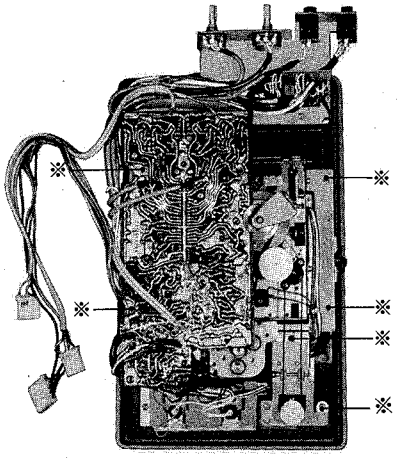


Figure 7

2-3 CABINET REMOVAL

a. Remove the player and the cassette and recorder. (See 2-1, 2-2)
b. Remove the six screws marked (※) shown in figure 8.
c. The cabinet can now be removed as shown in figure 9.

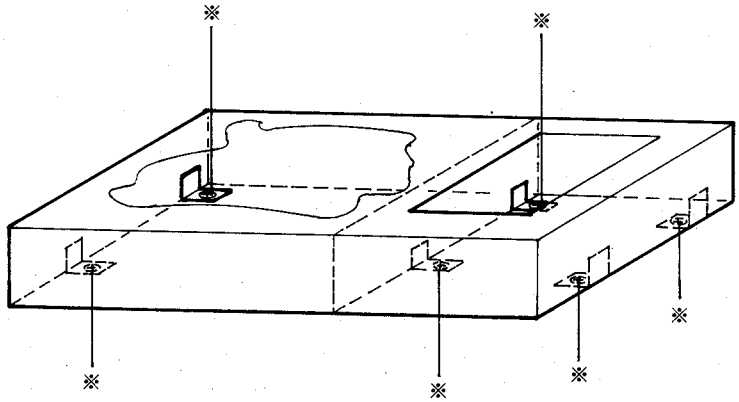


Figure 8

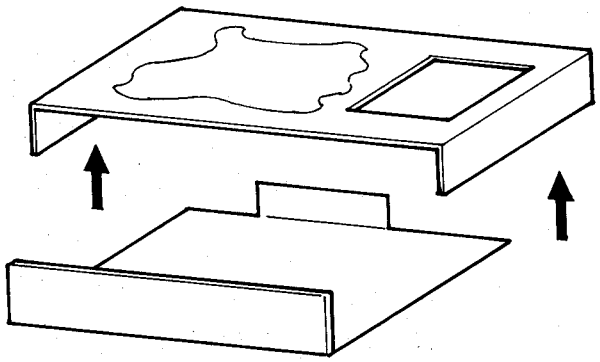
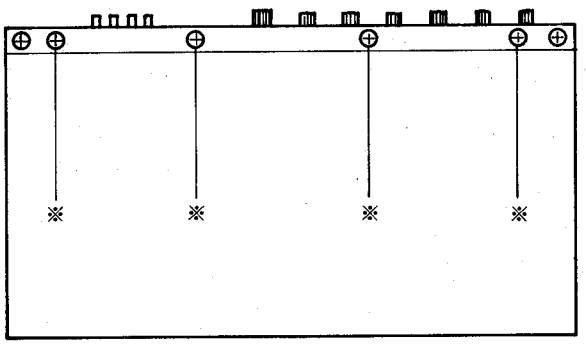


Figure 9

2-4 FRONT PANEL REMOVAL

a. Remove the cabinet. (See 2-3)
b. Remove the nine screws marked (※) as shown in figure 10.



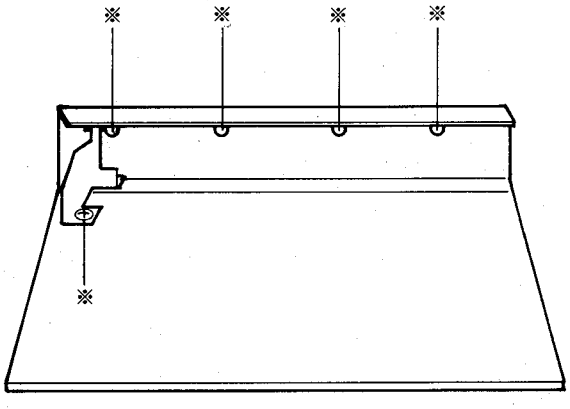


Figure 10

2-5 DIAL CORD STRINGING

a. Set the tuning capacitor to the minimum capacitance (fully clockwise position).
b. Wind the dial cord in the numerical sequence as shown in figure11.

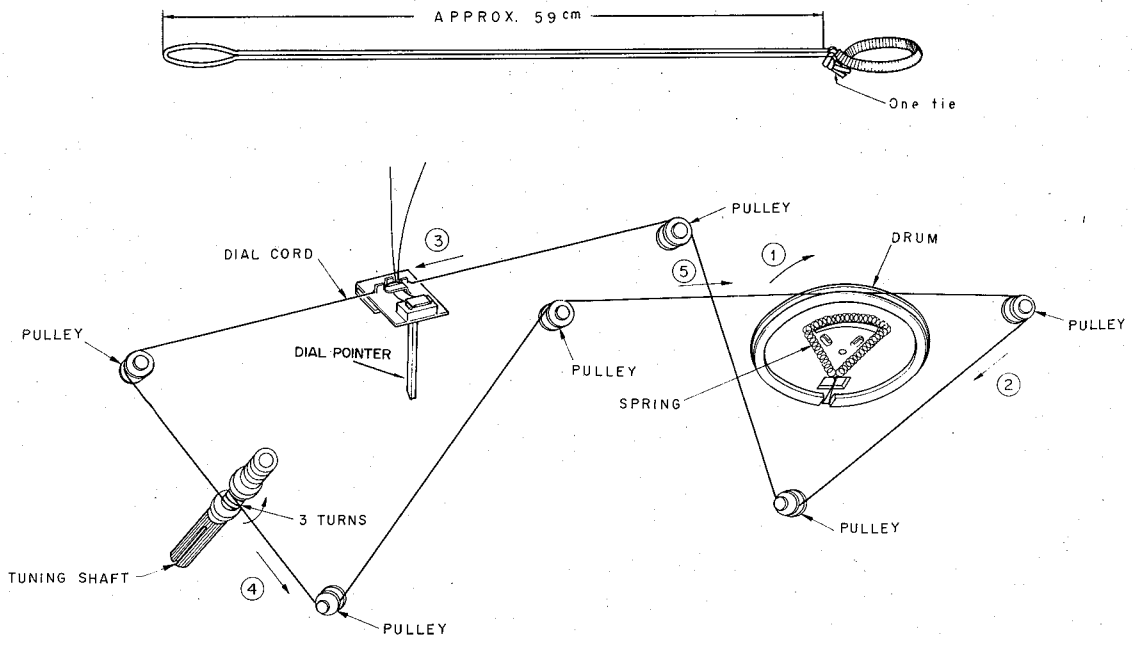


Figure 11

2-6 STYLUS & CARTRIGE REPLACEMENT

a. Exchange of a stylus can be done as shown in figure12.
b. Remove the cartridge from headshell. (see figure13)
c. Remove the four clips from cartridge. (figure14 is wiring)

CAUTION: When the cartridge (incl. headshell) is exchange, turn to the minimum volume position on amplifier.

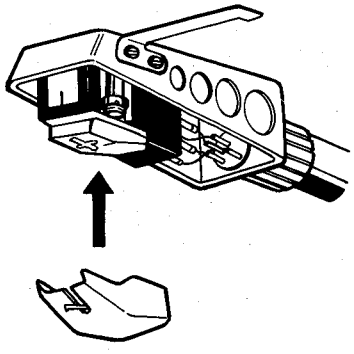


Figure 12

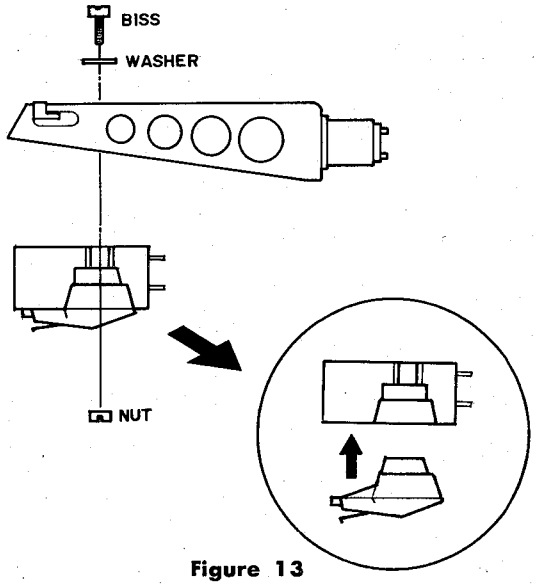


Figure 13

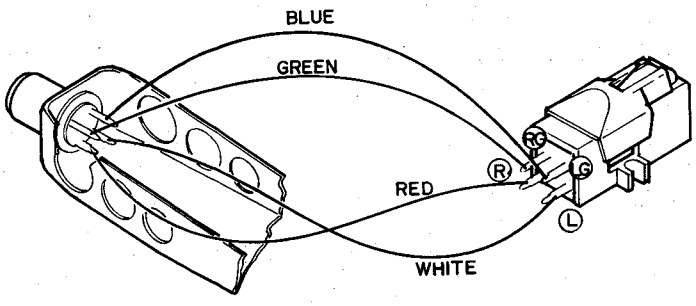


Figure 14

2-7 MISTAKEN ERASURE PROTECTION DEVICE

The arrow shows the relationship between recording side of the cassette and its break-off tab.
There is an erasure prevention plastic tab on the cassette tape case so that the recorded tape can not be erased by mistake.
When this plastic fillet is broken off, the erasure protection lever enters the cassette tape groove by working of the lever spring.
The record slider markes contact with the protection lever even if the record button is depressed, and valuable tapes which have been recorded can not be erased by mistake.

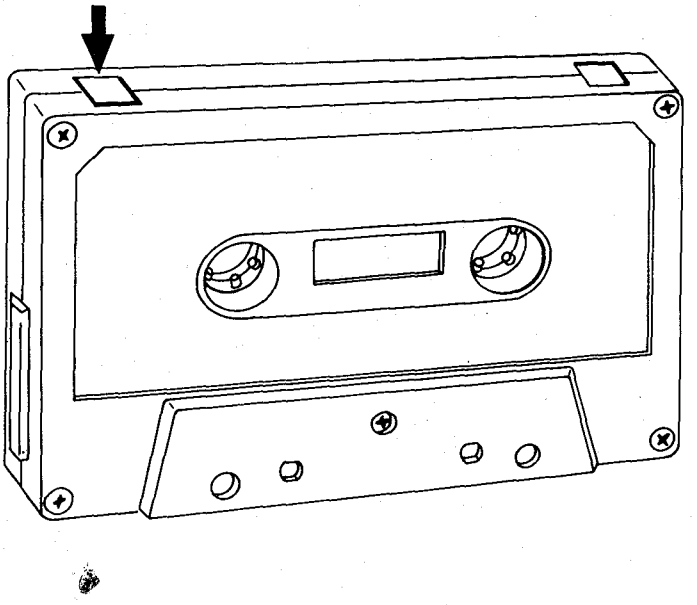


Figure 15

2-8 RECORD PLAYBACK HEAD ADJUSTMENT

A 6.3 kHz standard tape must be used for these adjustments.
Connect a VTVM or an oscilloscope to the headphone jack and use a philips screwdriver to adjust the azimuth and height so that the output voltage is maximum.

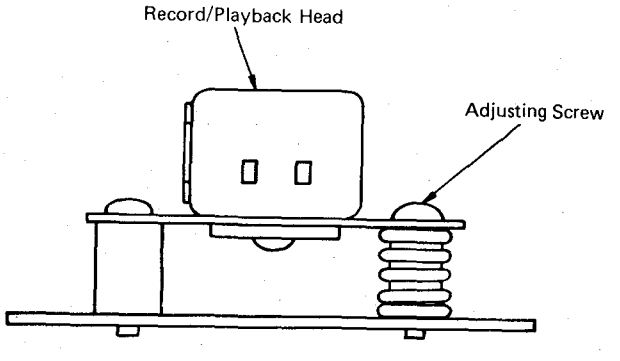


Figure 16

2-9 PLAYBACK OPERATION (PLAY)

The playback operation is just the same as mentioned below, except that the PLAY button alone is manipulated.

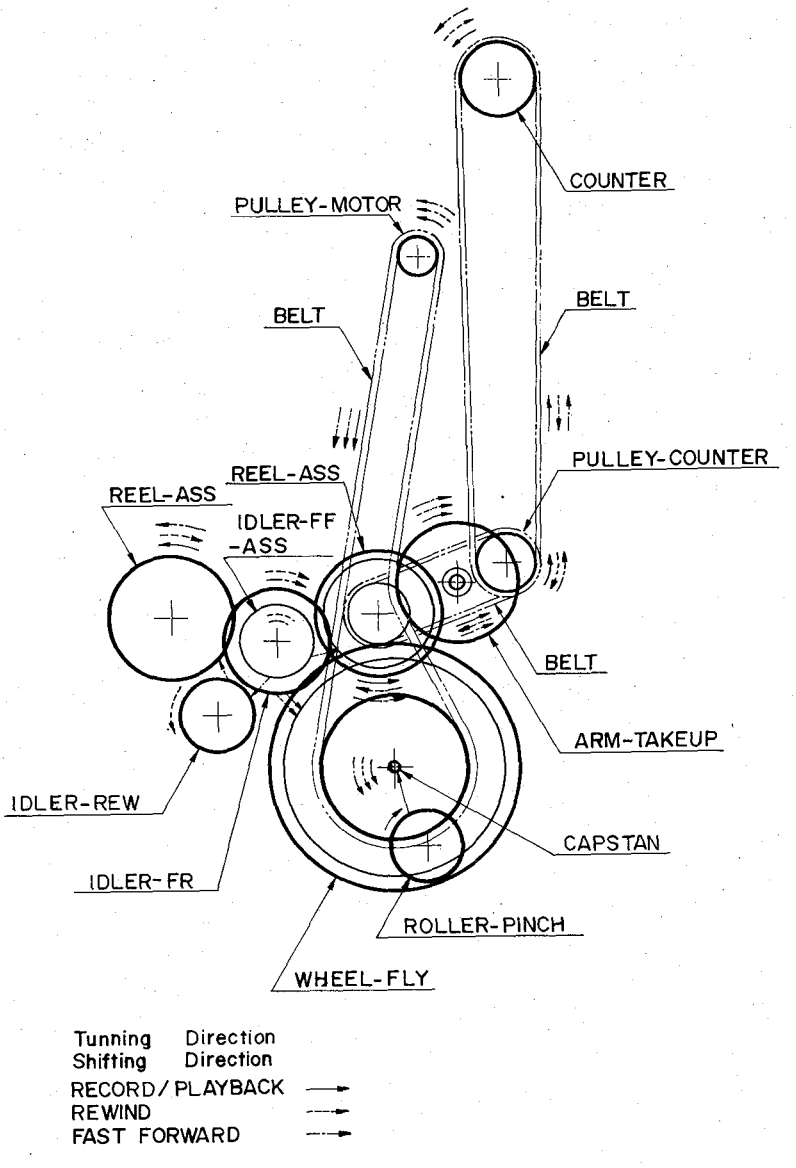


Figure 17

3. ALIGNMENT INSTRUCTIONS

THE FOLLOWING EQUIPMENT IS REQUIRED FOR ALIGNMENT

1. Sweep signal generator (Sweep rang of at least 300 kHz, center frequency of 10.7 MHz.)
2. Signal generator with a frequency range of at least from 140 kHz to 25 MHz for AM, from 85 MHz to 110 MHz and 10.7 MHz for FM.
3. Oscilloscope with a wide range amplifier of approximately 100 kHz.
4. Test loop, a coil of any size wire, one turn or more.
5. VTVM (Vacuum tube voltmeter.)
6. For alignment points, see schematic diagram.

NOTES:

1. During alignment keep the signal generator output at the lowest level where useable output from the set can be maintained.
2. Ground connection of signal generator ..... To chassis ground.
3. Generator modulation ..... 30%, 400 Hz.

3-1 LW ALIGNMENT

1. Set push switch to LW.
2. Set signal generator frequency as listed in TABLE 1. LW ALIGNMENT CHART.
3. Proceed as outlined in the TABLE 1. LW ALIGNMENT CHART.

TABLE 1. LW ALIGNMENT CHART (See Figure 18)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter or Oscilloscope Connection	Adjustment	Remarks
1	Test loop	145 kHz	Tuning gang fully counter-clockwise	VTVM across voice coil	L 108	Adjust for maximum
2	Test loop	385 kHz	Tuning gang fully clockwise	Same as step 1	TC 2-b	Same as step 1
3	Repeat steps 1 and 2 until no further improvement is noticed.					
4	Test loop	170 kHz	Tune to signal	Same as step 1	L 106-b	Same as step 1
5	Test loop	340 kHz	Tune to signal	Same as step 1	TC 1-d	Same as step 1
6	Repeat steps 4 and 5 until no further improvement is noticed.					

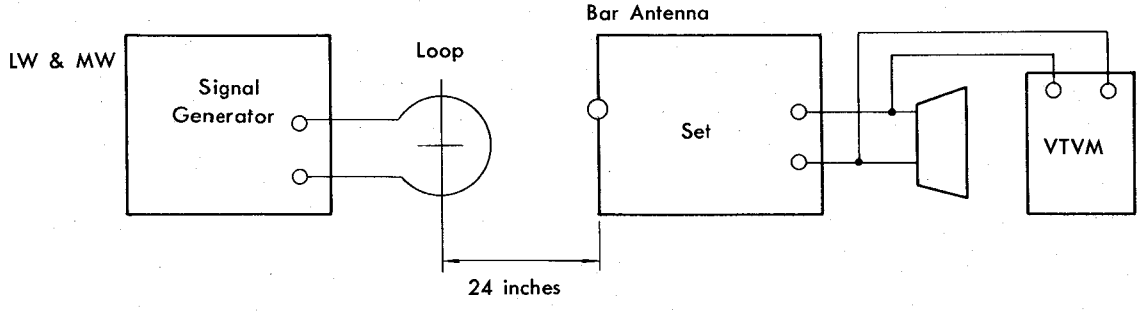


Figure 18

3-2 MW ALIGNMENT

1. Set push switch to MW.
2. Set signal generator frequency as listed in TABLE 2 MW ALIGNMENT CHART.
3. Proceed as outlined in the TABLE 2 MW ALIGNMENT CHART.

TABLE 2 MW ALIGNMENT CHART (See Figure 19)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter or Oscilloscope Connection	Adjustment	Remarks
1	Test loop	455 kHz	Tuning gang fully counter-clockwise	VTVM across voice coil	IT 205 IT 206 IT 207	Adjust for maximum
2	Test loop	505 kHz	Same as step 1	Same as step 1	L 107	Same as step 1
3	Test loop	1650 kHz	Tuning gang fully clockwise	Same as step 1	TC 2-a	Same as step 1
4	Repeat steps 2 and 3 until no further improvement is noticed.					
5	Test loop	600 kHz	Tune to signal	Same as step 1	L 106-a	Same as step 1
6	Test loop	1400 kHz	Tune to signal	Same as step 1	TC 1-c	Same as step 1
7	Repeat steps 5 and 6 until no further improvement is noticed.					

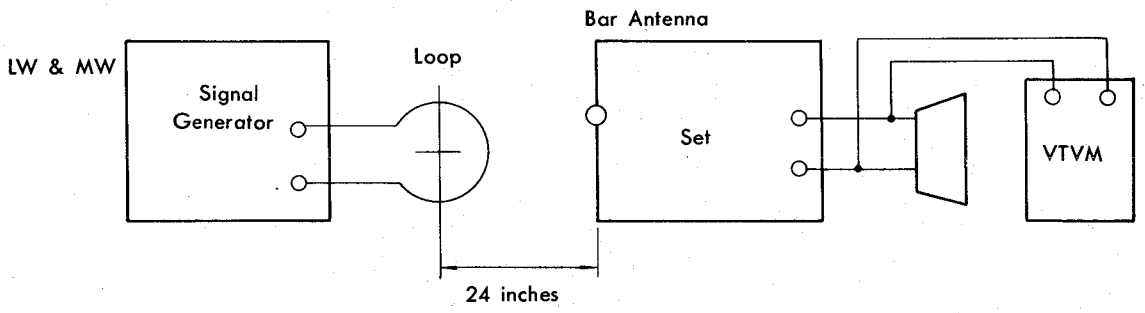


Figure 19

3-3 FM ALIGNMENT

1. Set push switch to FM.
2. Set signal generator frequency as listed in TABLE 3 FM ALIGNMENT CHART.
3. Proceed as outlined in the TABLE 3 FM ALIGNMENT CHART.

TABLE 3 FM ALIGNMENT CHART (See Figure 20)

Step	Signal Generator Connection	Signal Generator Frequency	Radio Dial Setting	Meter or Oscilloscope Connection	Adjustment	Remarks
1	Sweep Generator through buffer to TP 1	10.7 MHz	Tuning gang fully counter-clockwise	Scope to TP 2 as shown in Figure 20.	IT 201 IT 202 IT 203 IT 204	See "S" curve in Figure 20.
2	300 ohms matching pad	87.7MHz	Same as step 1	VTVM across voice coil	L 105	Adjust for maximum
3	Same as step 2	109.5MHz	Tuning gang fully clockwise	Same as step 2	TC 1-b	Same as step 2
4	Repeat steps 2 and 3 until no further improvement is noticed.					
5	Same as step 2	90 MHz	Tune to signal	Same as step 2	L 102 L 103	Same as step 2
6	Same as step 2	106 MHz	Tune to signal	Same as step 2	TC 1-a	Same as step 2
7	*Repeat steps 5 and 6 until no further improvement is noticed.*					

CAUTION:
When realigning the FM Receiving Frequency, the lowest side of the frequency range must not be below 87.5MHz in order to comply with FTZ regulations in West Germany.

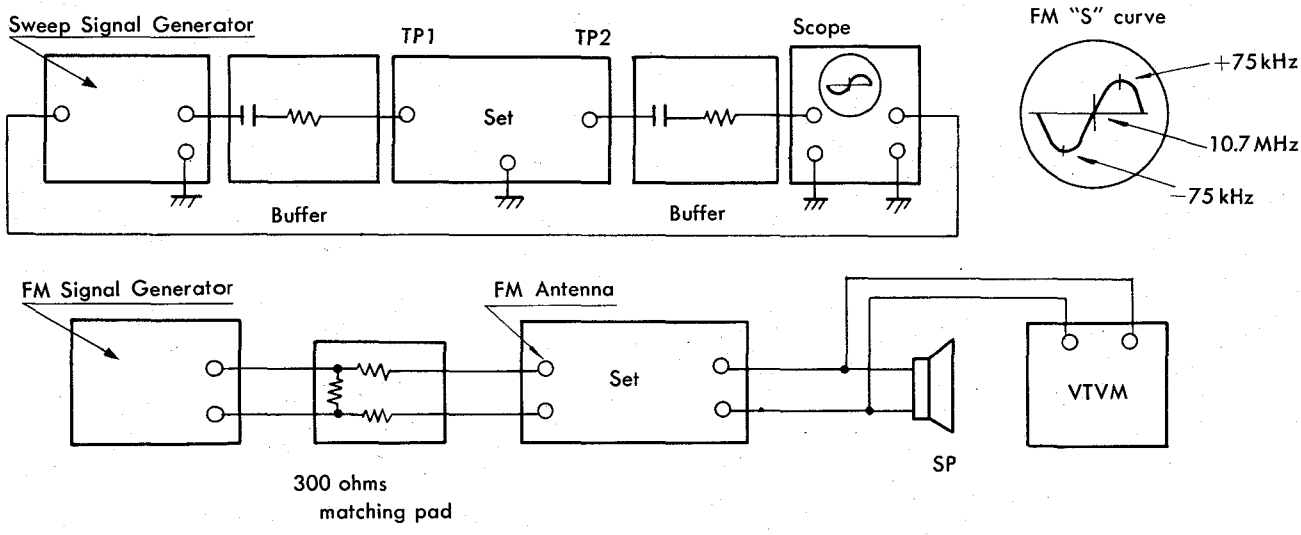


Figure 20

3-4 FM STEREO ALIGNMENT

General Alignment conditions

1. RF signal input should be about 60 dB (1 mV).
2. Set tuning gang to quiet point on dial.
3. Set push switch to FM-STEREO.

Note:

Set the deviation meter by the signal of L = R and switch mode desired.

TABLE 4. FM STEREO ALIGNMENT CHART (See Figure 21)

Step	Modulation Frequency set to-	Modulation Mode set to-	Modulation Level set to-	Output Indicator connected to-	Adjustment	Remarks
1	19 kHz	Pilot only	Retain to just below limiting on output indicator	Oscilloscope or VTVM to light on at weak signal	MXT 201	Adjust for maximum
2	1000Hz	Sub. (L-R) with pilot if not available stereo L	30% 10% (pilot)	Oscilloscope VTVM across voice coil of L ch.	MXT 202 slightly	Adjust for maximum
3	1000Hz	Stereo R	Same as step 2	Same as step 2	R233; 500 ohms Semi-fixed resistor (Separation)	Adjust for minimum

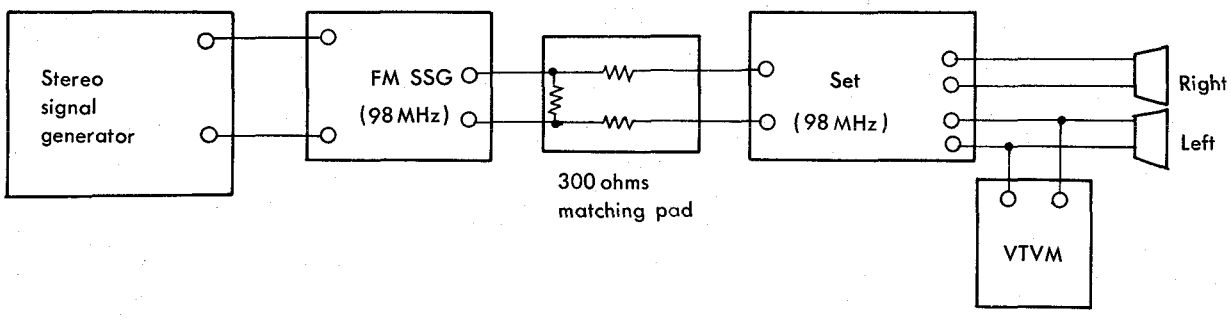
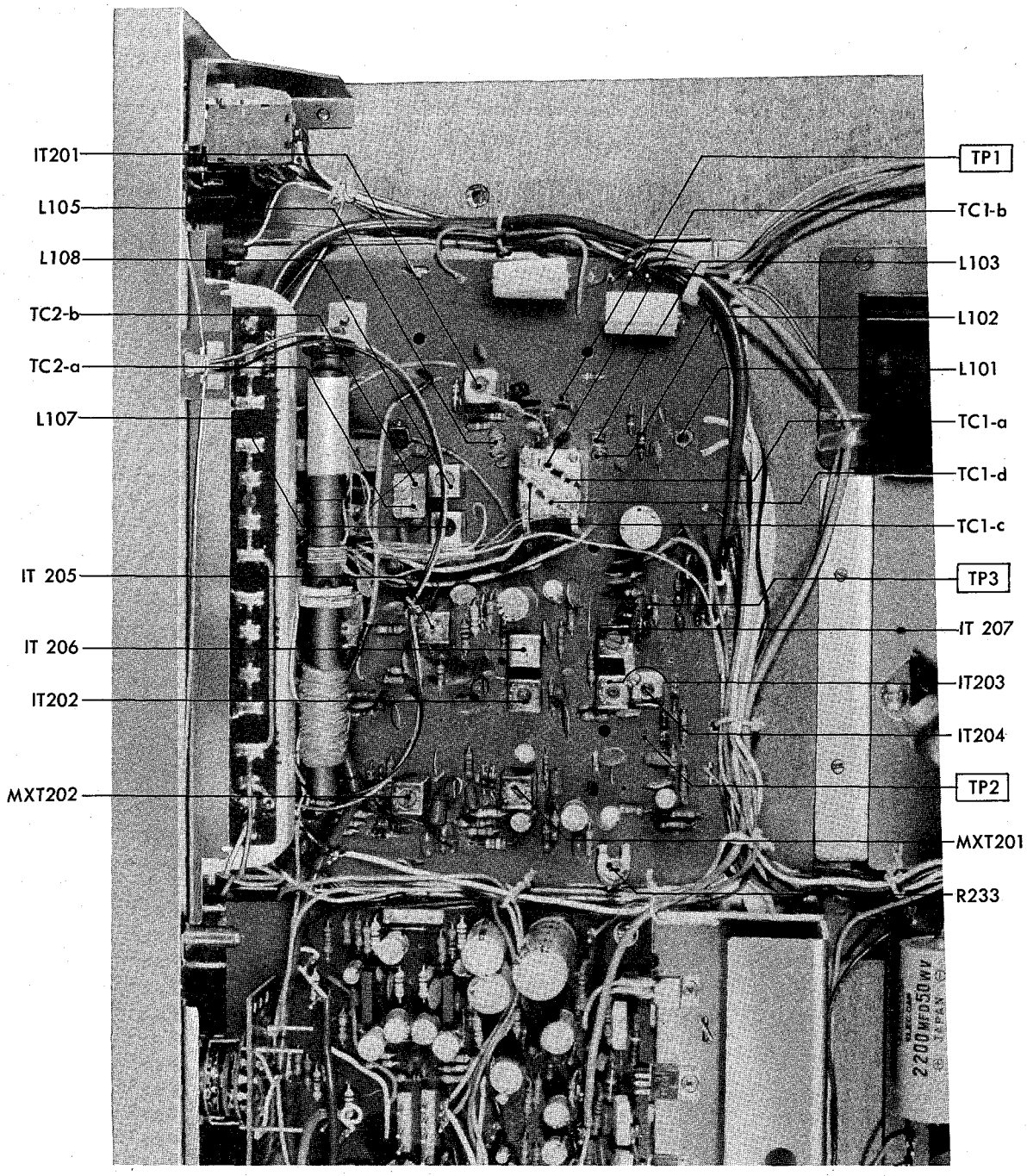


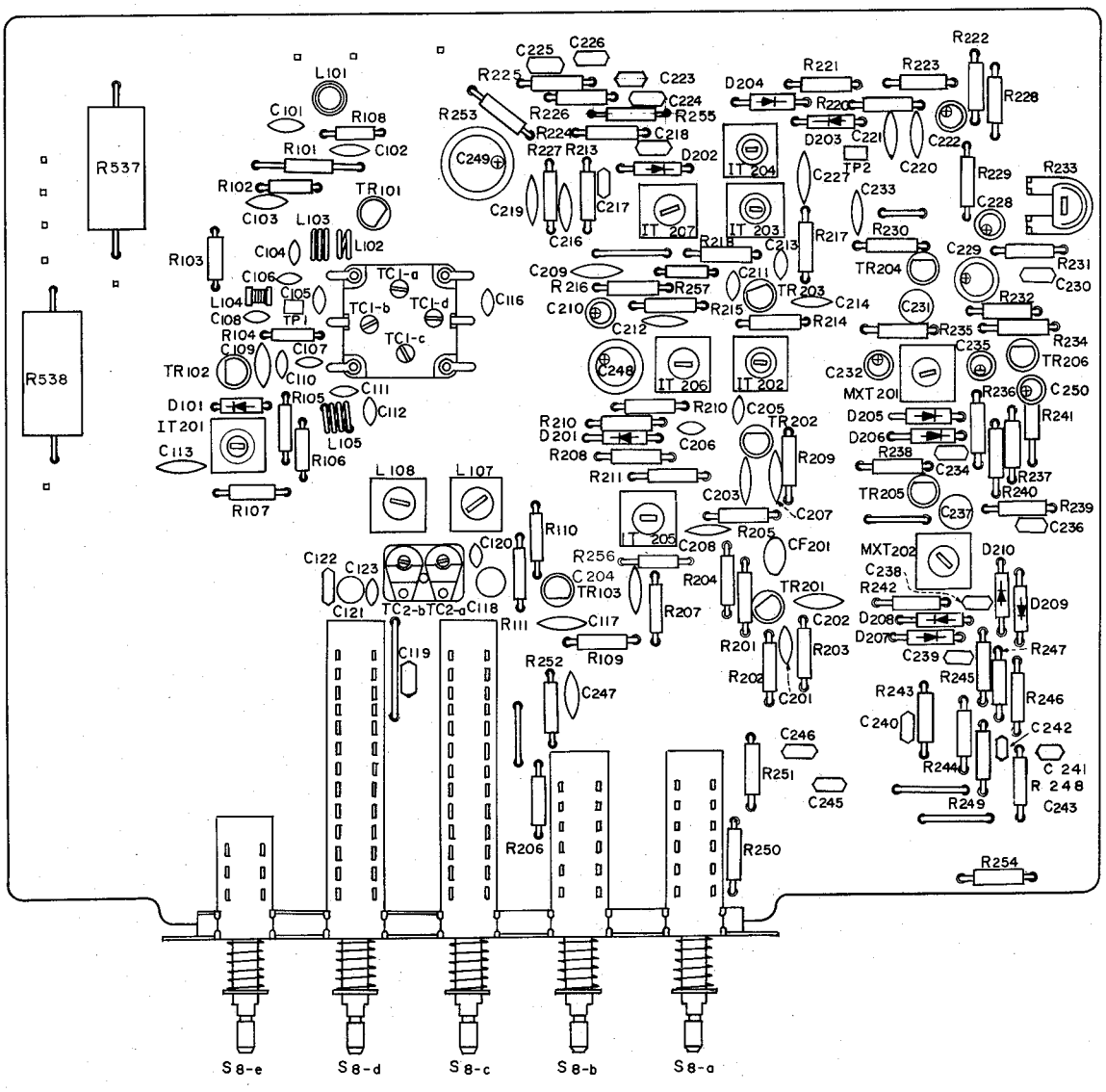
Figure 21

4. PARTS LOCATIONS

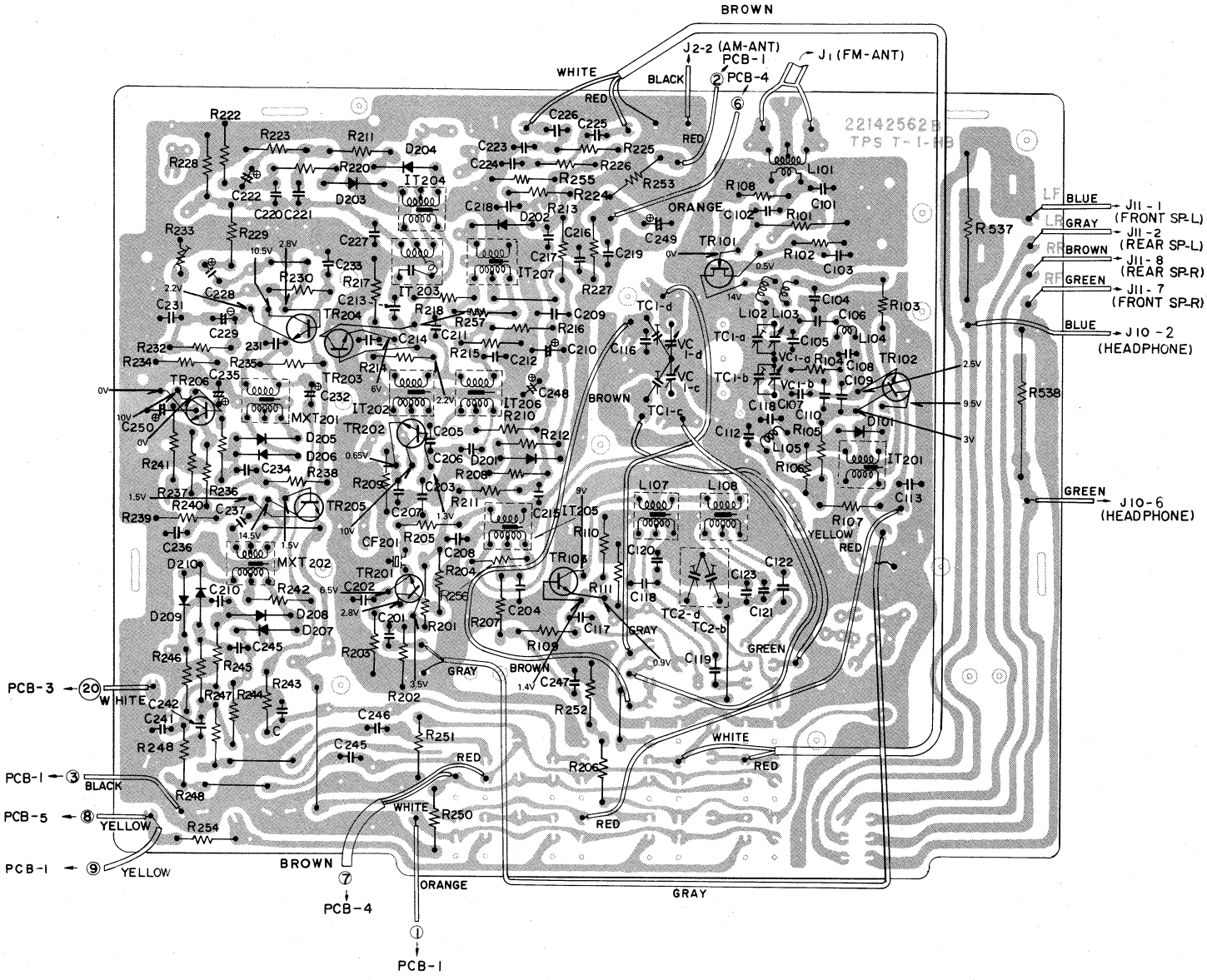


5. PRINTED CIRCUIT BORD DIAGRAMS

5-1 RADIO UNIT

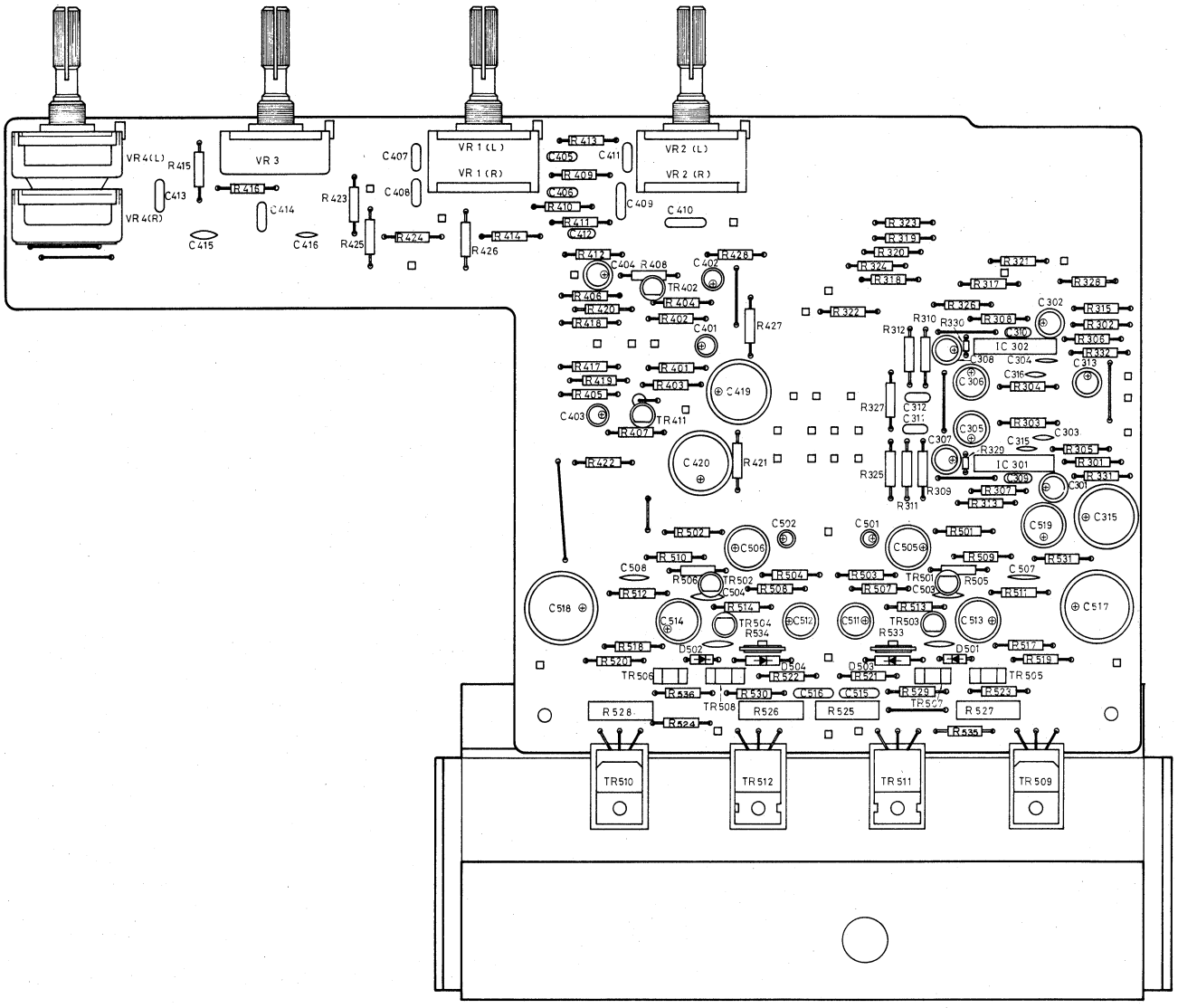


TOP VIEW

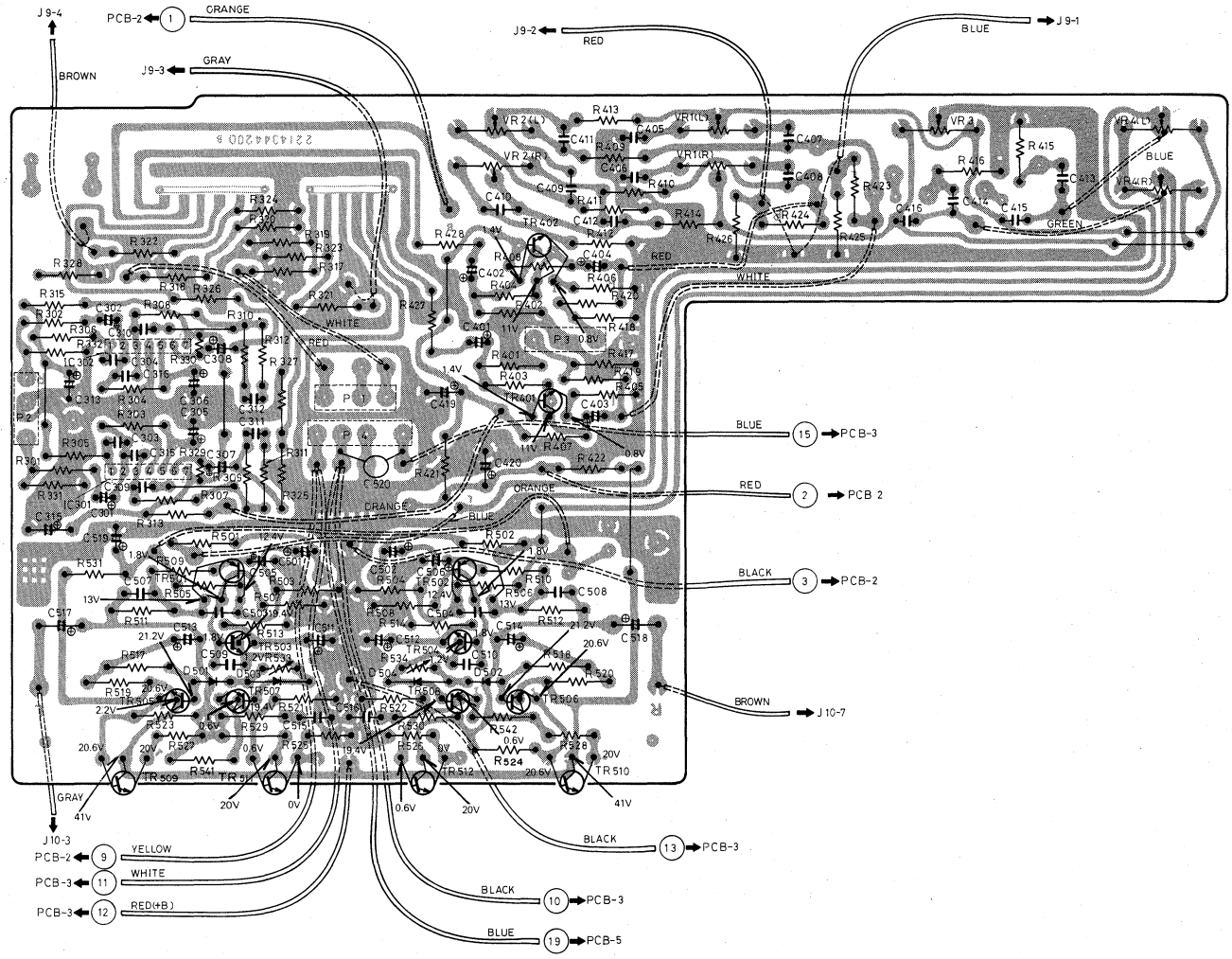

BROWN
J2-2 (AM-ANT)
PCB-1
J1 (FM-ANT)
WHITE
BLACK
RED
② PCB-4
⑥
22142562B
TPS T-1-NB
LF BLUE → J11-1 (FRONT SP-L)
LR GRAY → J11-2 (REAR SP-L)
RR BROWN → J11-8 (REAR SP-R)
RF GREEN → J11-7 (FRONT SP-R)
BLUE → J10-2 (HEADPHONE)
GREEN → J10-6 (HEADPHONE)
ORANGE
GRAY
YELLOW
PCB-3 → ⑳ WHITE
PCB-1 → ③ BLACK
PCB-5 → ⑧ YELLOW
PCB-1 → ⑨ YELLOW
BROWN
⑦ PCB-4
ORANGE
① PCB-1
GRAY

BOTTOM VIEW

5-2 AF UNIT

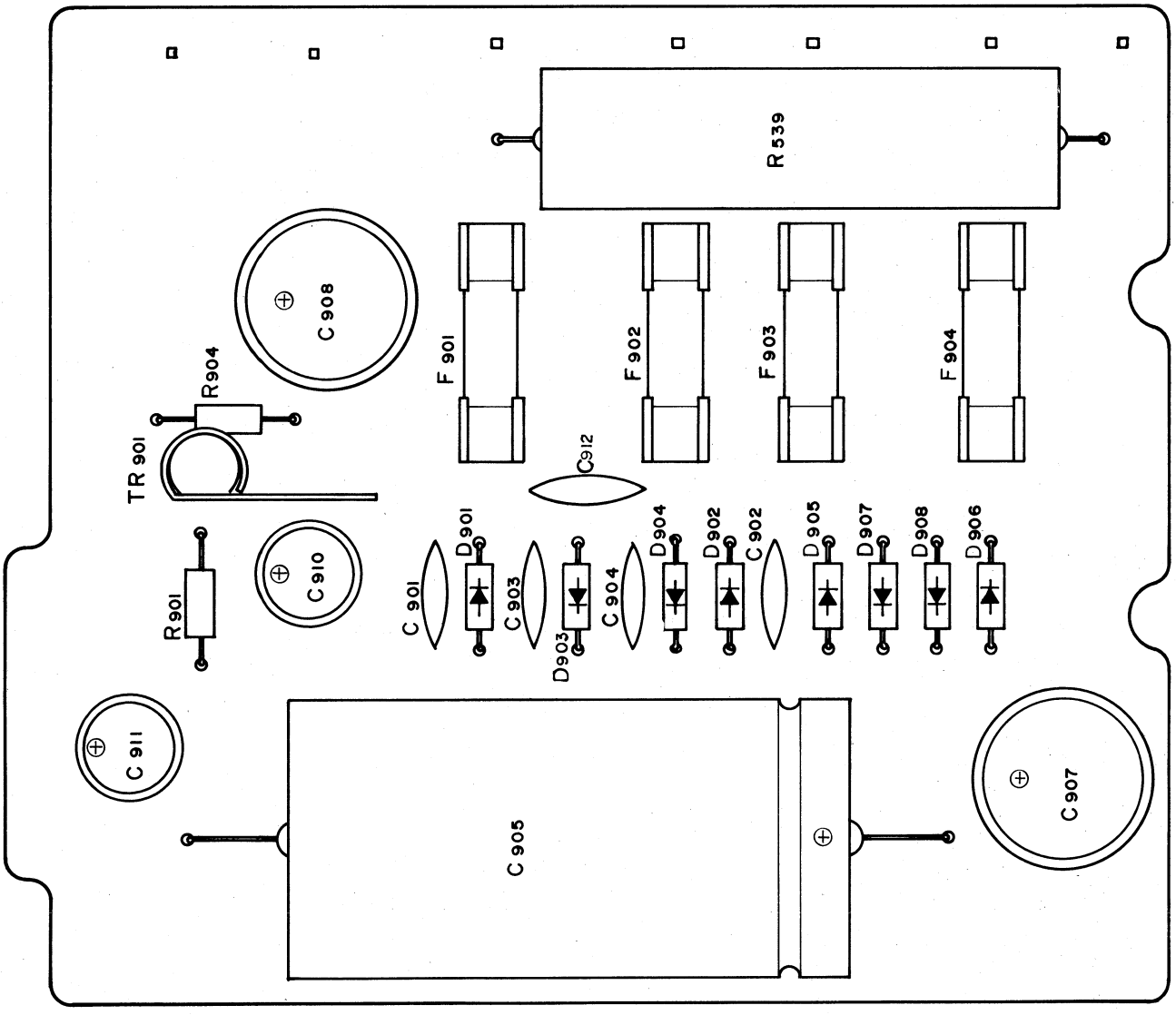


TOP VIEW

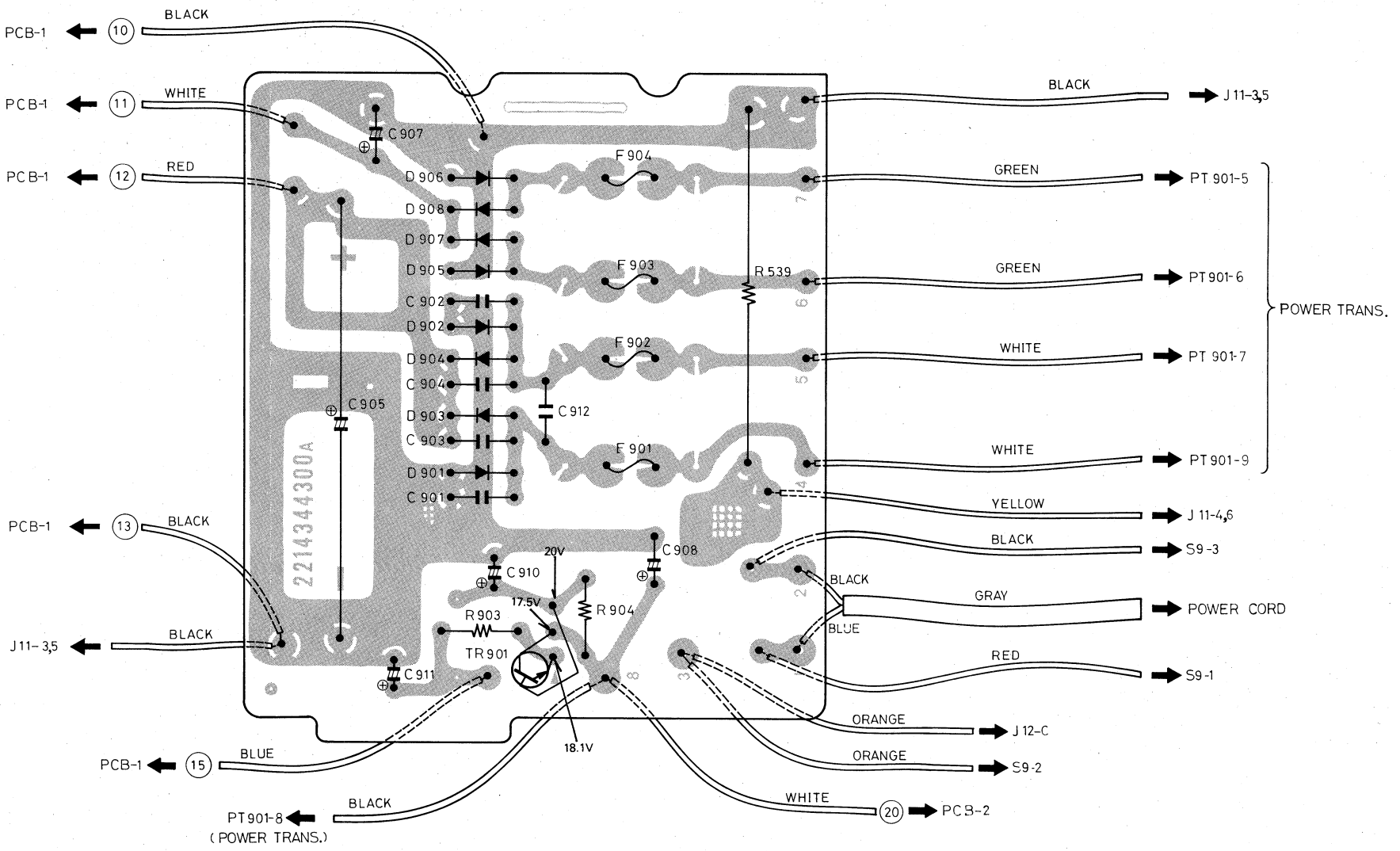

J 9-4
PCB-2
1
ORANGE
BROWN
J9-3
GRAY
J9-2
RED
BLUE
J 9-1
BLUE
15
PCB-3
RED
2
PCB 2
BLACK
3
PCB-2
BROWN
J 10-7
BLACK
13
PCB-3
BLACK
10
PCB-3
BLUE
19
PCB-5
J10-3
PCB-2
9
YELLOW
PCB-3
11
WHITE
PCB-3
12
RED(+B)
GRAY
41v
WHITE
GREEN

BOTTOM VIEW

5-3 POWER SUPPLY UNIT

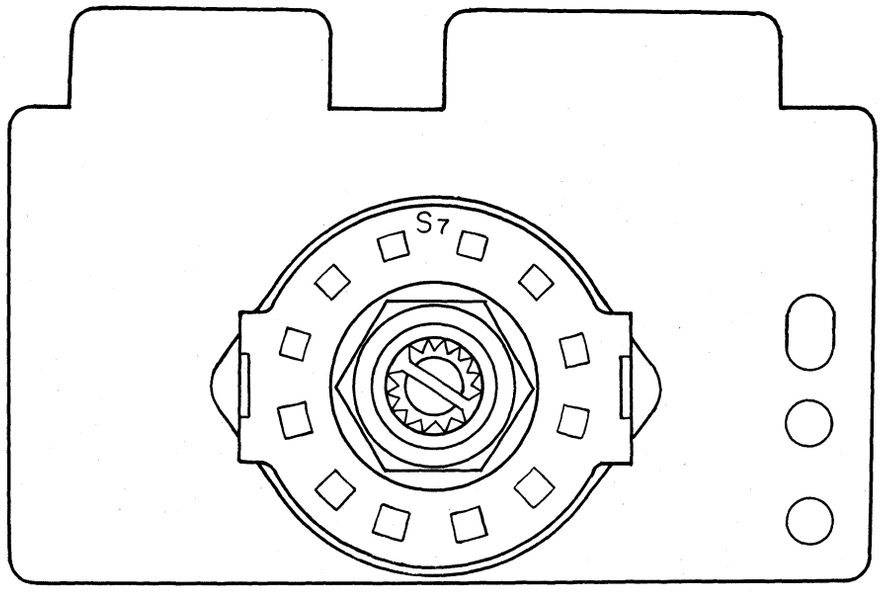


TOP VIEW

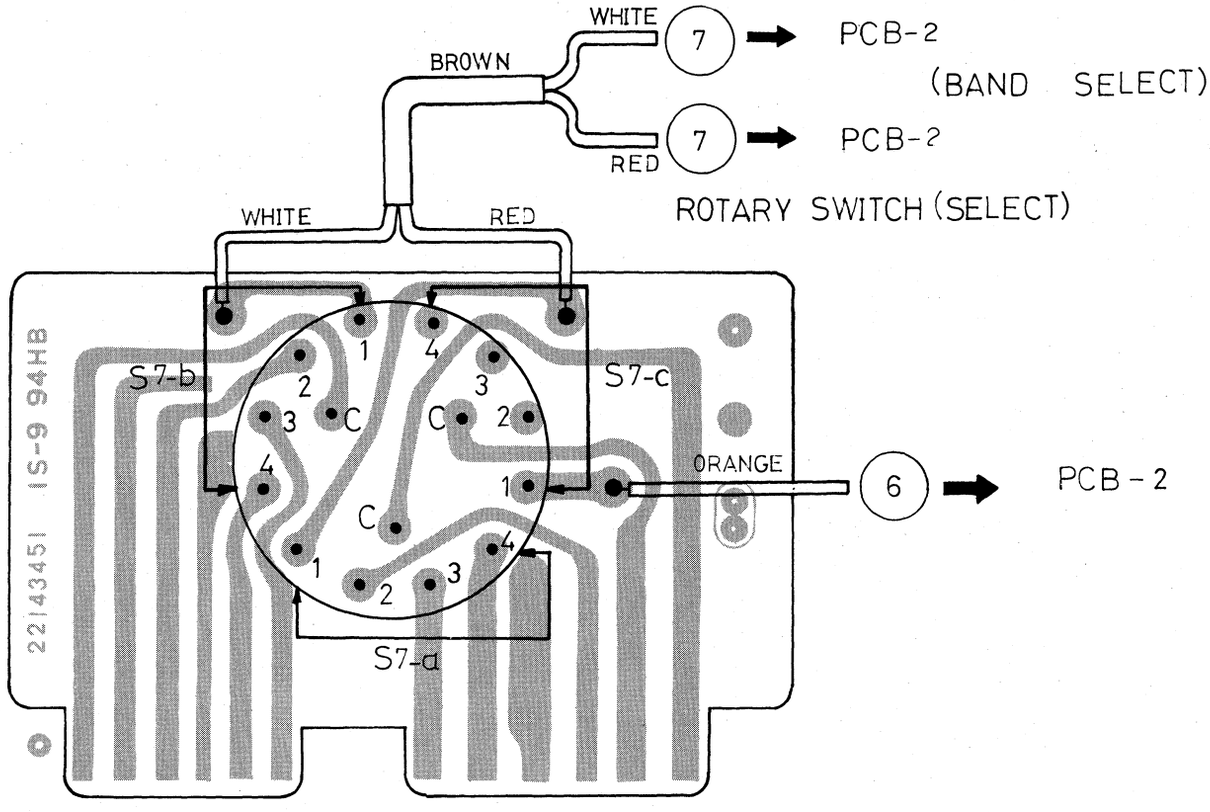

PCB-1 (10) BLACK
PCB-1 (11) WHITE
PCB-1 (12) RED
PCB-1 (13) BLACK
J11-3,5 BLACK
PCB-1 (15) BLUE
PT901-8 (POWER TRANS.) BLACK
C907
C905
C911
C910
C908
C912
D906
D908
D907
D905
C902
D902
D904
C904
D903
C903
D901
C901
F904
F903
F902
F901
R539
R903
R904
TR901
20V
17.5V
18.1V
221434300A
BLACK J11-3,5
GREEN PT901-5
GREEN PT901-6
WHITE PT901-7
WHITE PT901-9
POWER TRANS.
YELLOW J11-4,6
BLACK S9-3
BLACK
GRAY POWER CORD
BLUE
RED S9-1
ORANGE J12-C
ORANGE S9-2
WHITE (20) PCB-2

BOTTOM VIEW

5-4 SWITCH UNIT

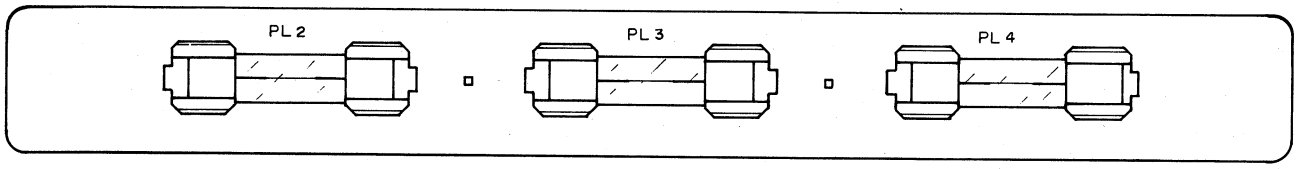


TOP VIEW

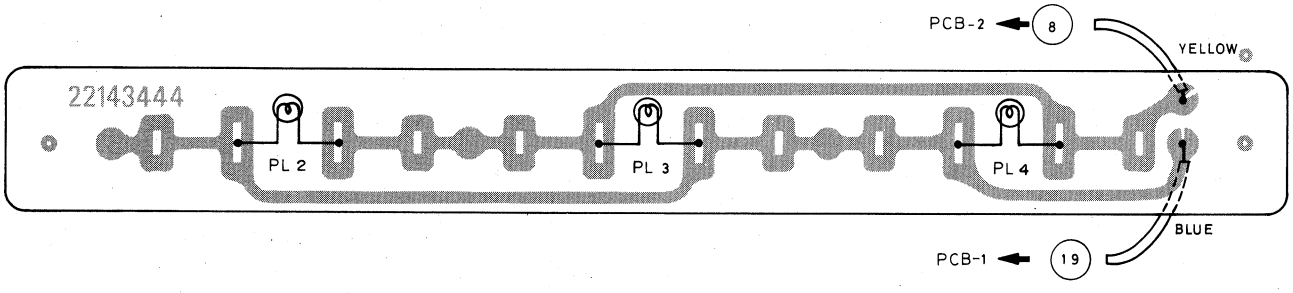


BOTTOM VIEW

5-5 LAMP UNIT

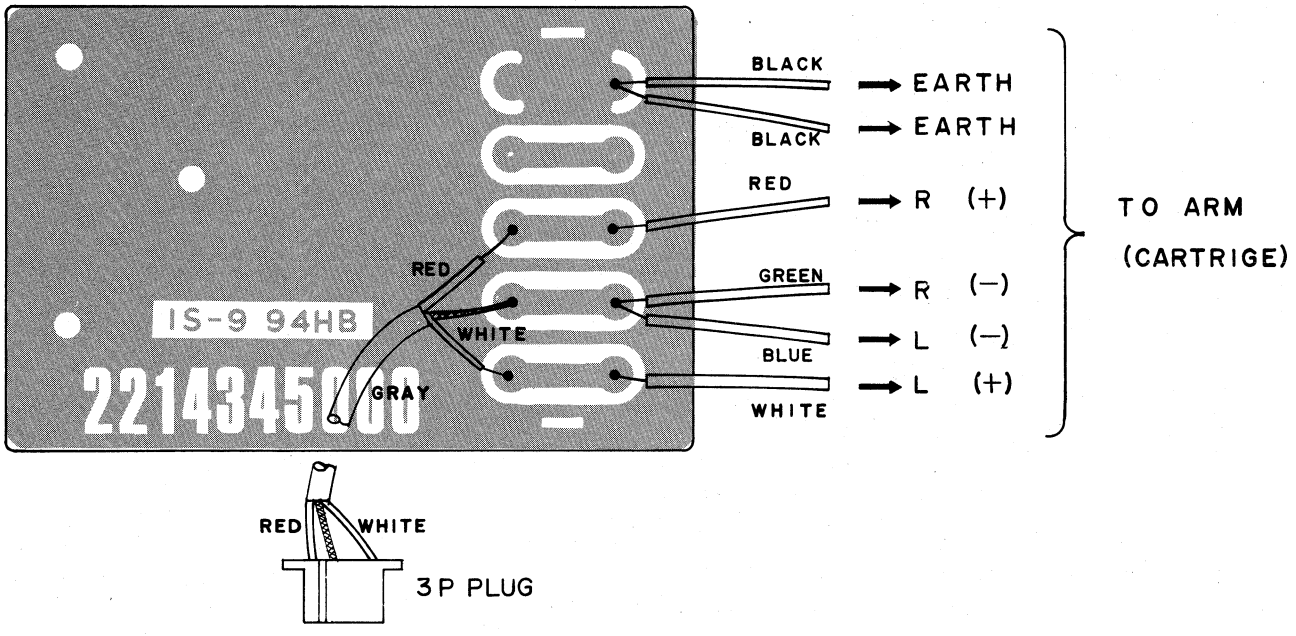


TOP VIEW



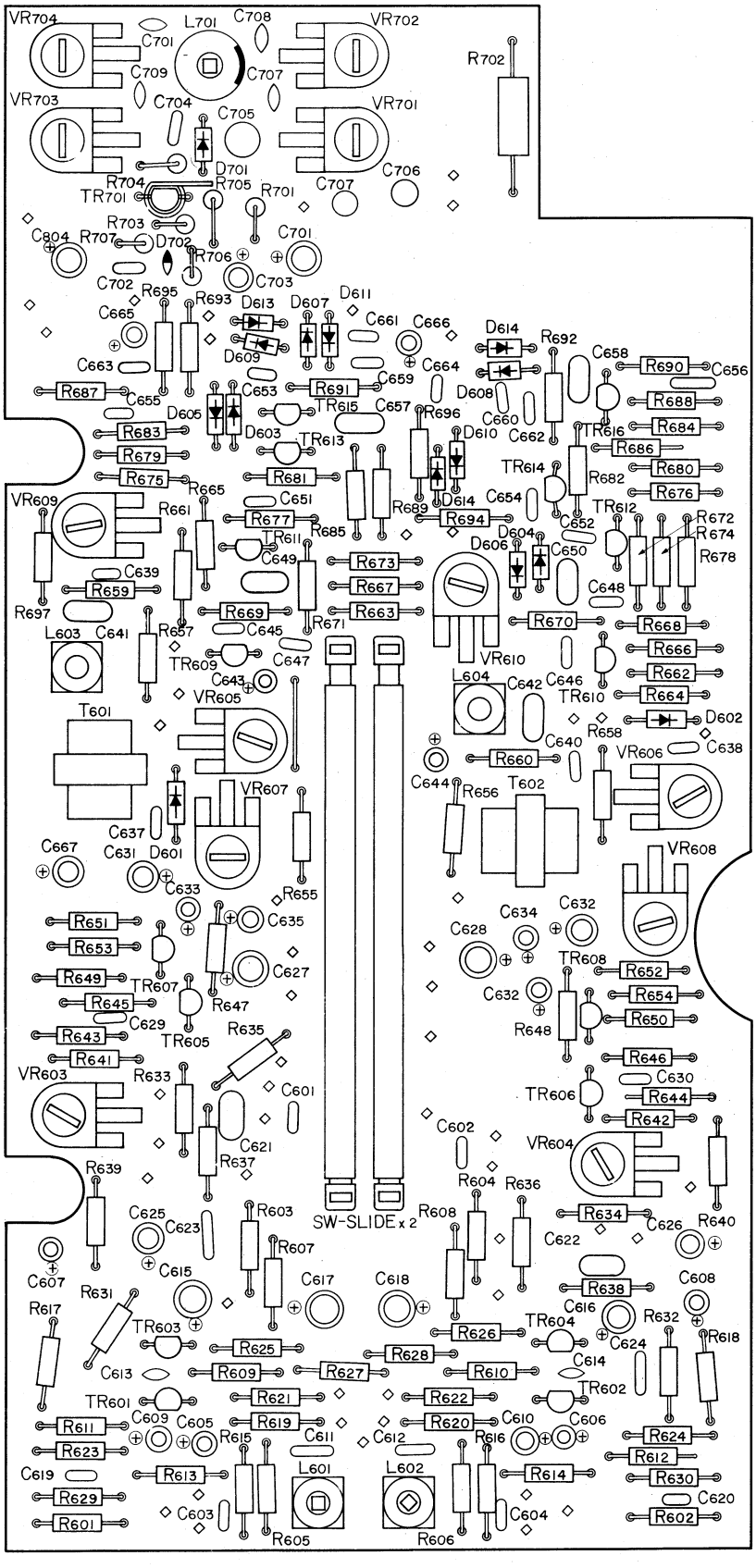
BOTTOM VIEW

5-6 PHONO UNIT 《PLAYER》

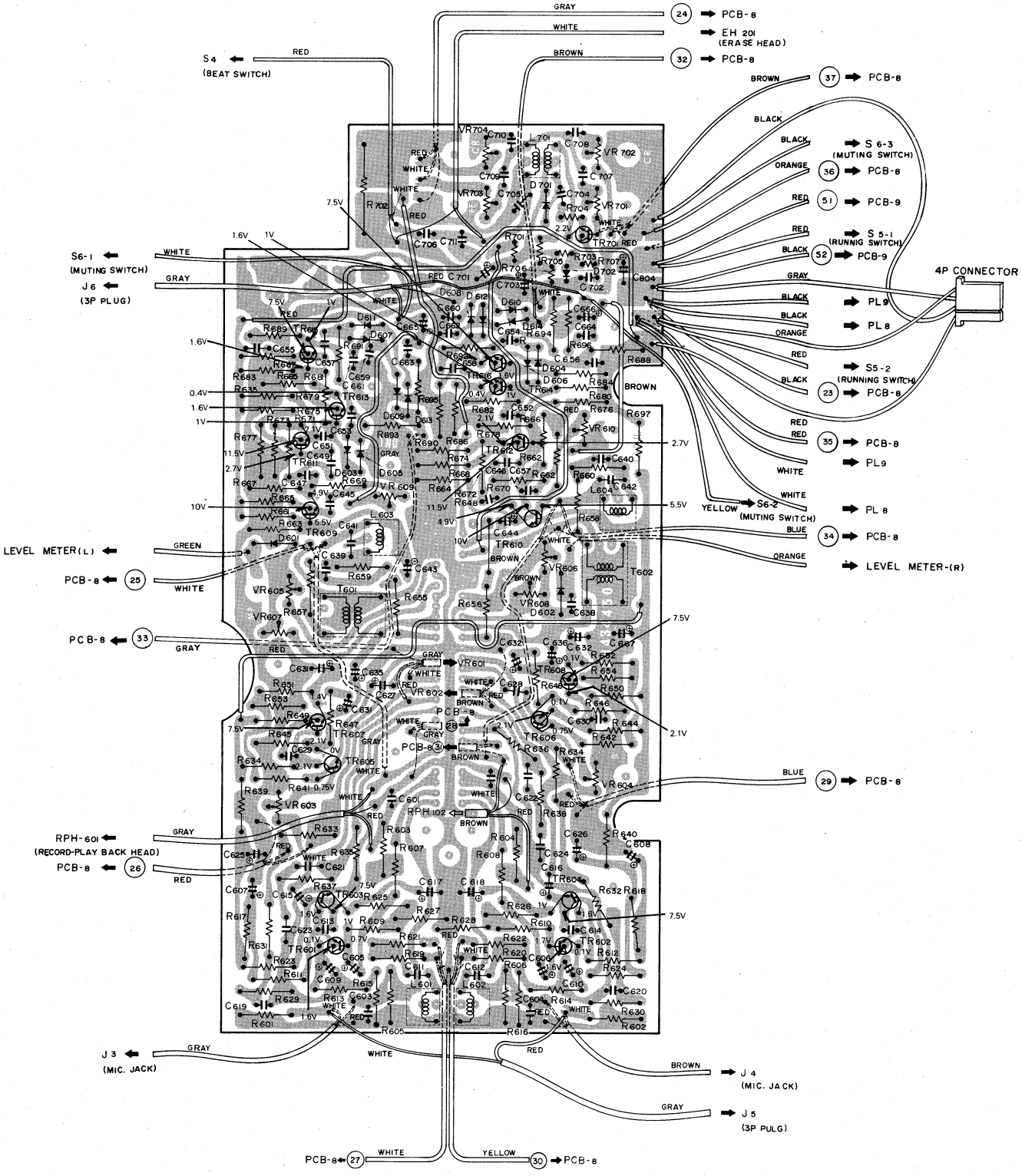


BOTTOM VIEW

5-7 PRE AMP. UNIT 《CASSETTE》

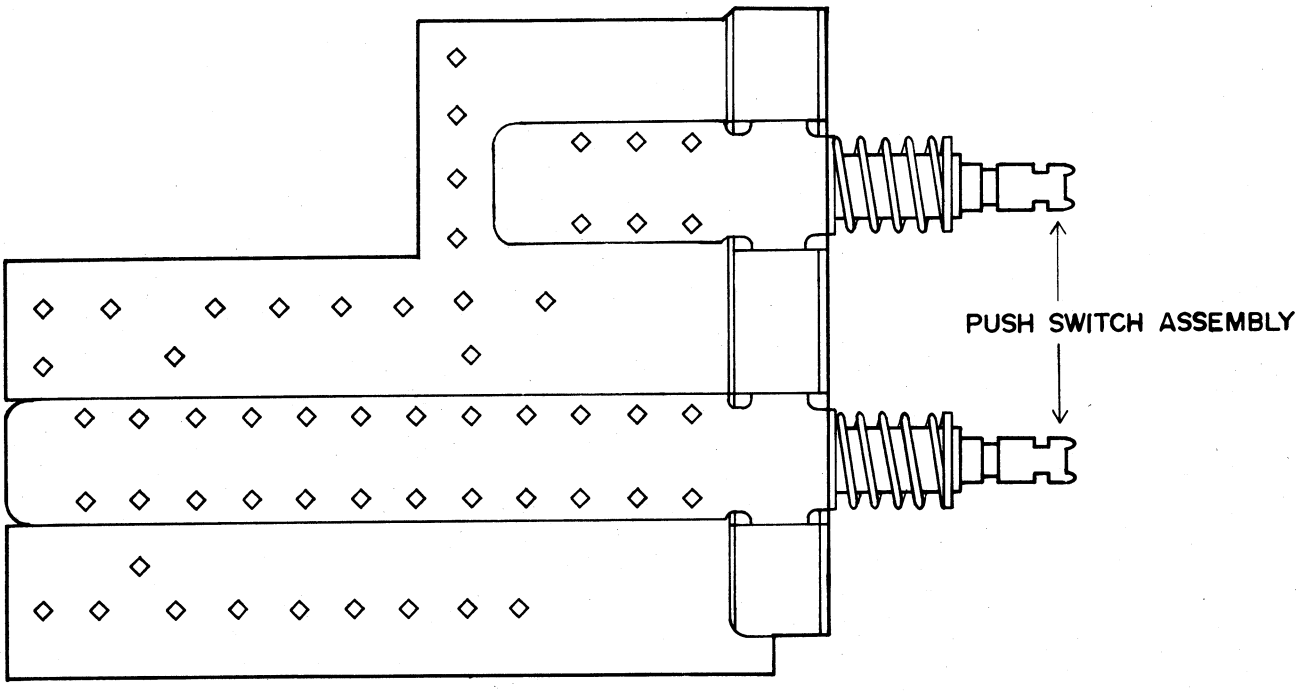


TOP VIEW

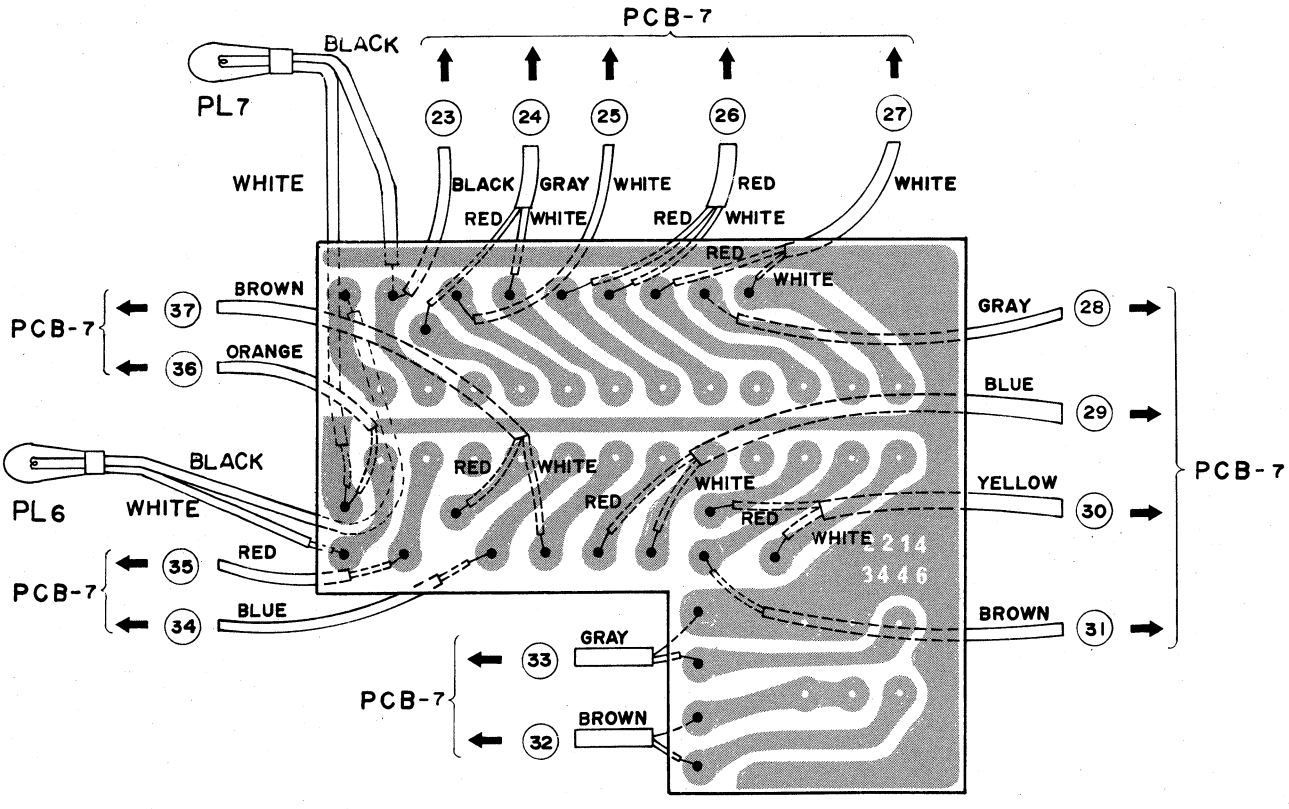

S4
(BEAT SWITCH)
S6-1
(MUTING SWITCH)
J6
(3P PLUG)
LEVEL METER(L)
PCB-8 25
PCB-8 33
RPH-601
(RECORD-PLAY BACK HEAD)
PCB-8 26
J3
(MIC. JACK)
PCB-8 27
PCB-8 24
EH 201
(ERASE HEAD)
PCB-8 32
PCB-8 37
S6-3
(MUTING SWITCH)
PCB-8 36
PCB-9 51
S5-1
(RUNNIG SWITCH)
PCB-9 52
4P CONNECTOR
PL9
PL8
S5-2
(RUNNING SWITCH)
PCB-8 23
PCB-8 35
PL9
S6-2
(MUTING SWITCH)
PL8
PCB-8 34
LEVEL METER-(R)
PCB-8 29
PCB-8 30
J4
(MIC. JACK)
J5
(3P PULG)

BOTTOM VIEW

5-8 SWITCH UNIT 《CASSETTE》

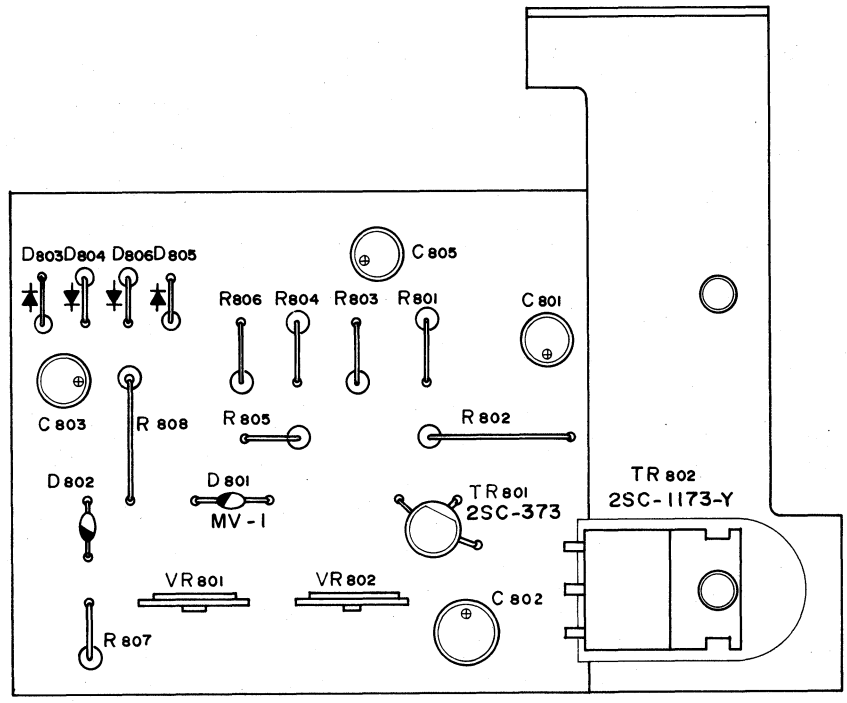


TOP VIEW

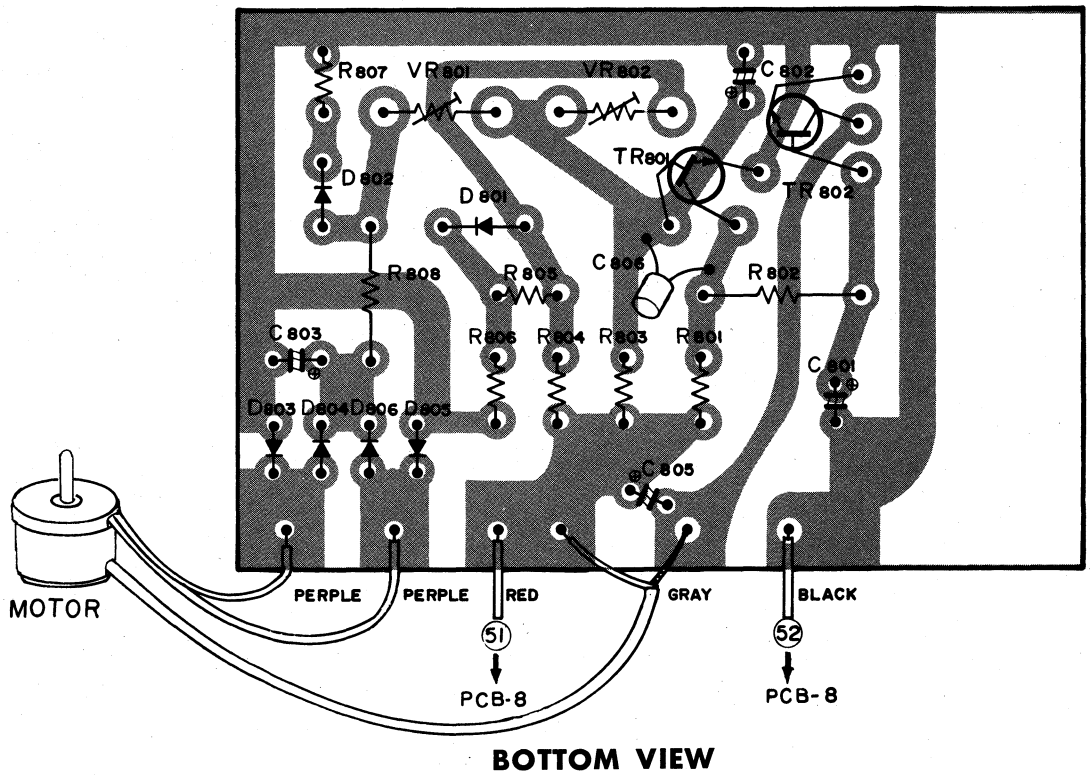


BOTTOM VIEW

5-9 MOTOR UNIT 《CASSETTE》



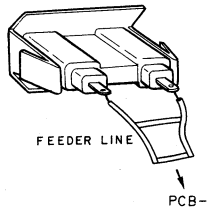
TOP VIEW



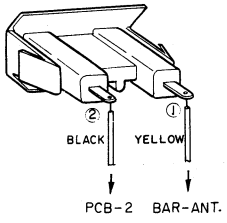
BOTTOM VIEW

5-10 PARTS CONNECTION

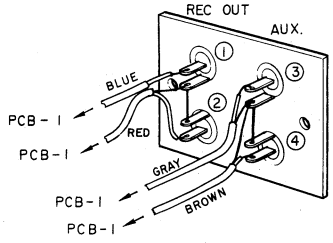
J1 FM-ANT.



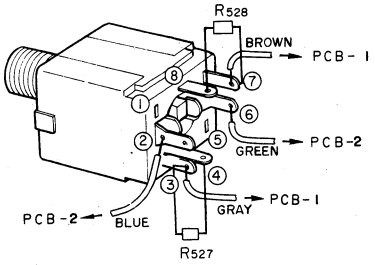
J2 AM-ANT.



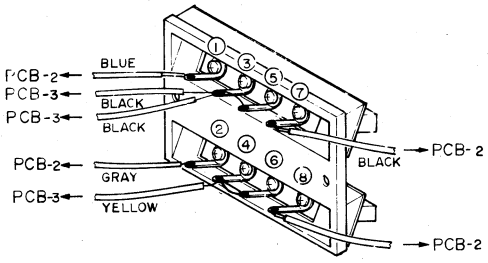
J9 REC OUT AND AUX JACK



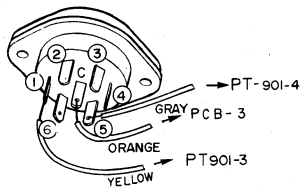
J10 HEADPHONE JACK



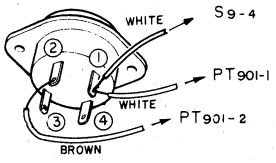
J11 FRONT AND REAR SPEAKER. JACK



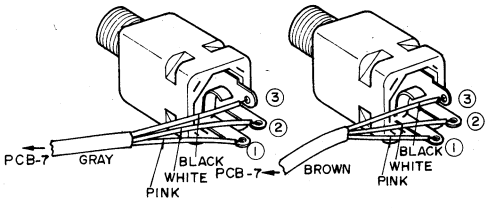
J12 VOLTAGE SELECT



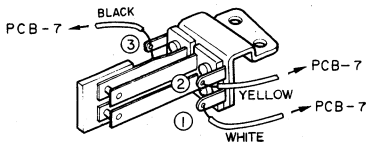
J13 PLAYER SOCKET (POWER SUPPLY)



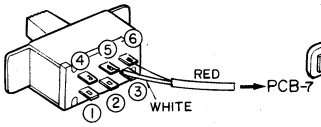
J4, J3 MIC JACK



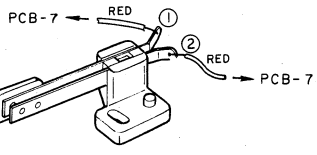
S6 MUTING SWITCH



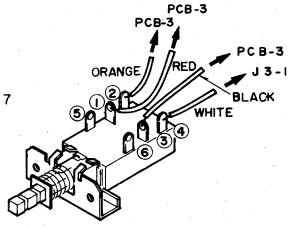
S4 INTERFERENCE ERASER



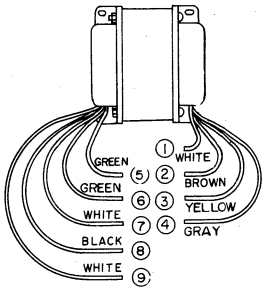
S5 RUNNING SWITCH



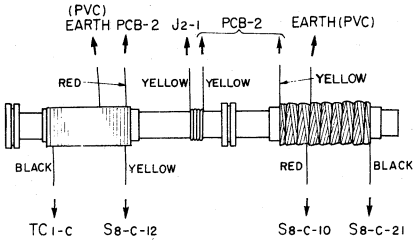
S9 POWER SWITCH



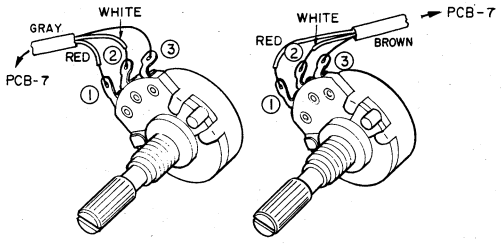
PT901 POWER TRANS.



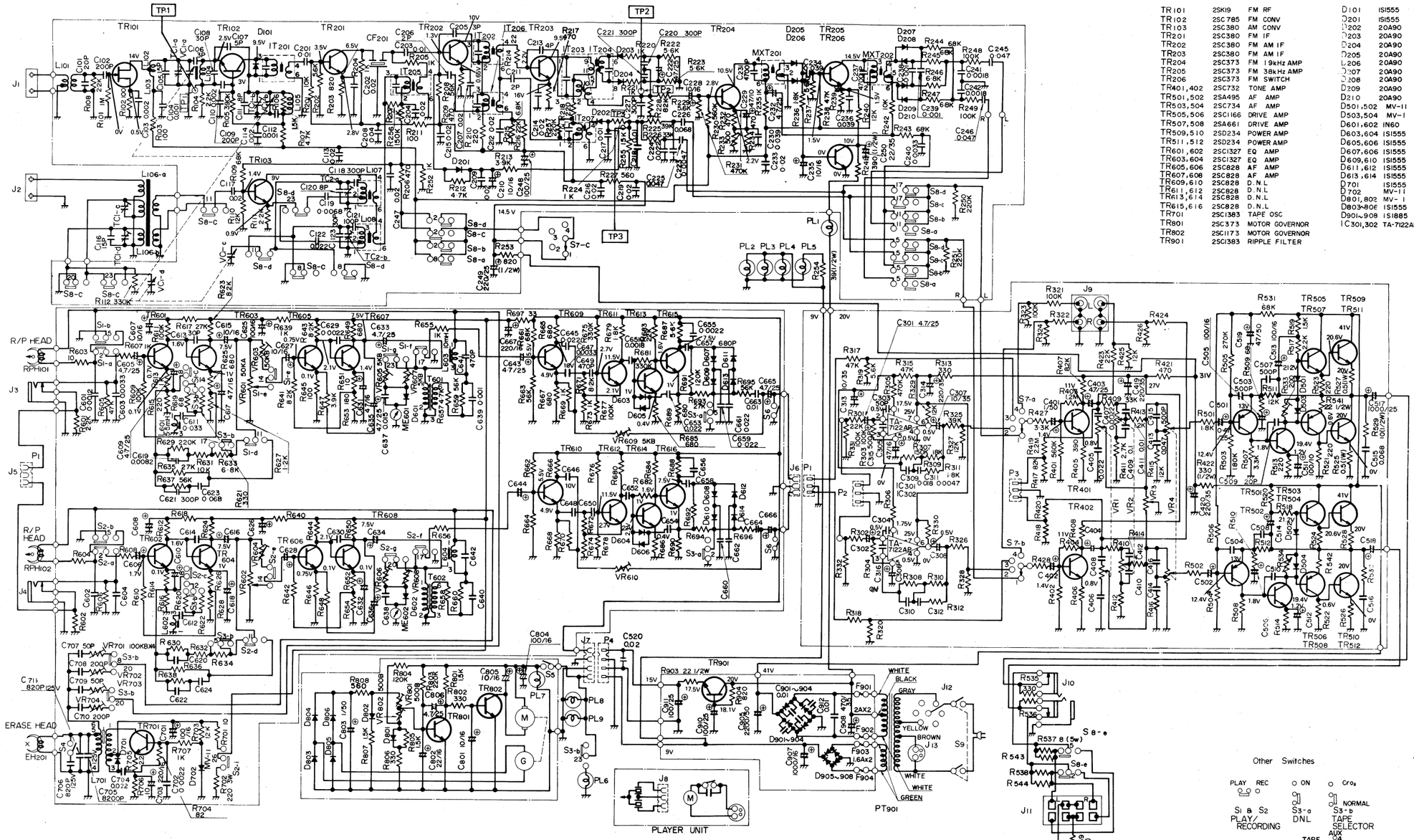
L106 BAR ANTENNA



VR601, VR602 RECORDING VOLUME



6. SCHEMATIC DIAGRAM



TR101	2SK19	FM RF
TR102	2SC785	FM CONV
TR103	2SC380	AM CONV
TR201	2SC380	FM IF
TR202	2SC380	FM AM IF
TR203	2SC380	FM AM IF
TR204	2SC373	FM 19kHz AMP
TR205	2SC373	FM 38kHz AMP
TR206	2SC373	FM SWITCH
TR401,402	2SC732	TONE AMP
TR501,502	2SA495	AF AMP
TR503,504	2SC734	AF AMP
TR505,506	2SC1166	DRIVE AMP
TR507,508	2SA661	DRIVE AMP
TR509,510	2SD234	POWER AMP
TR511,512	2SD234	POWER AMP
TR601,602	2SC1327	EQ AMP
TR603,604	2SC1327	EQ AMP
TR605,606	2SC828	AF AMP
TR607,608	2SC828	AF AMP
TR609,610	2SC828	D.N.L
TR611,612	2SC828	D.N.L
TR613,614	2SC828	D.N.L
TR615,616	2SC828	D.N.L
TR701	2SC1383	TAPE OSC
TR801	2SC373	MOTOR GOVERNOR
TR802	2SC1173	MOTOR GOVERNOR
TR901	2SC1383	RIPPLE FILTER

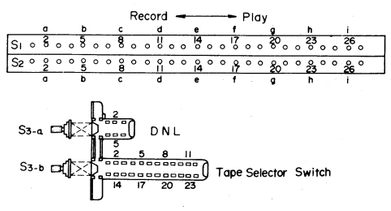
D101	ISI555	FM LIMITER
D201	ISI555	AM AGC
D202	20A90	AM DET
D203	20A90	FM DISCRI
D204	20A90	FM DISCRI
D205	20A90	DOUBLER
D206	20A90	DOUBLER
D207	20A90	MPX SWITCH
D208	20A90	MPX SWITCH
D209	20A90	MPX SWITCH
D210	20A90	MPX SWITCH
D501,502	MV-11	BIAS
D503,504	MV-1	BIAS
D601,602	IN60	RECTIFIER
D603,604	ISI555	D.N.L
D605,606	ISI555	D.N.L
D607,606	ISI555	D.N.L
D609,610	ISI555	D.N.L
D611,612	ISI555	D.N.L
D613,614	ISI555	D.N.L
D701	ISI555	TAPE OSC
D702	MV-11	TAPE OSC
D801,802	MV- 1	MOTOR GOVERNOR
D803-806	ISI555	MOTOR GOVERNOR
D901~908	ISI885	RECT
IC301,302	TA-7122AP	EQ AMP

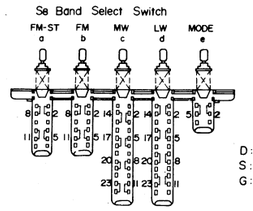
NOTE

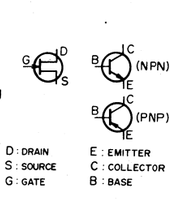
1) ALL RESISTANCE VARUES ARE IN OHMS.
ALL CAPACITANCE VARUES ARE IN MICROFARADS.

K=1,000 M=1,000,000 $P=\frac{1}{1,000,000}$

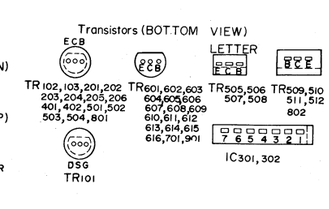
2) PLAY RECORDING "S1 & S2" IS SHOWN IN "PLAY" POSITION.
3) SELECT "S3-b" IS SHOWN IN "NORMAL" POSITION.
4) SELECT "S7" IS SHOWN IN "RADIO" POSITION.
5) BAND SELECT "S8" IS SHOWN IN "MW" POSITION.
6) COMPONENTS AND VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICE FOR IMPROVEMENT.







Transistors (BOTTOM VIEW)



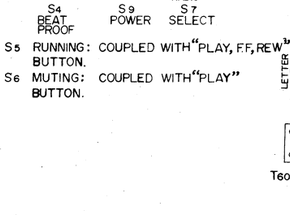
TR102, 103, 201, 202, 203, 204, 205, 206, 401, 402, 501, 502, 503, 504, 801

TR601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 701, 901

TR505, 506, 507, 508

TR509, 510, 511, 512, 802

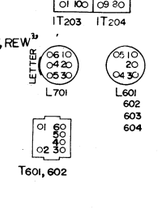
Other Switches



S5 RUNNING: COUPLED WITH "PLAY, FF, REW" BUTTON.

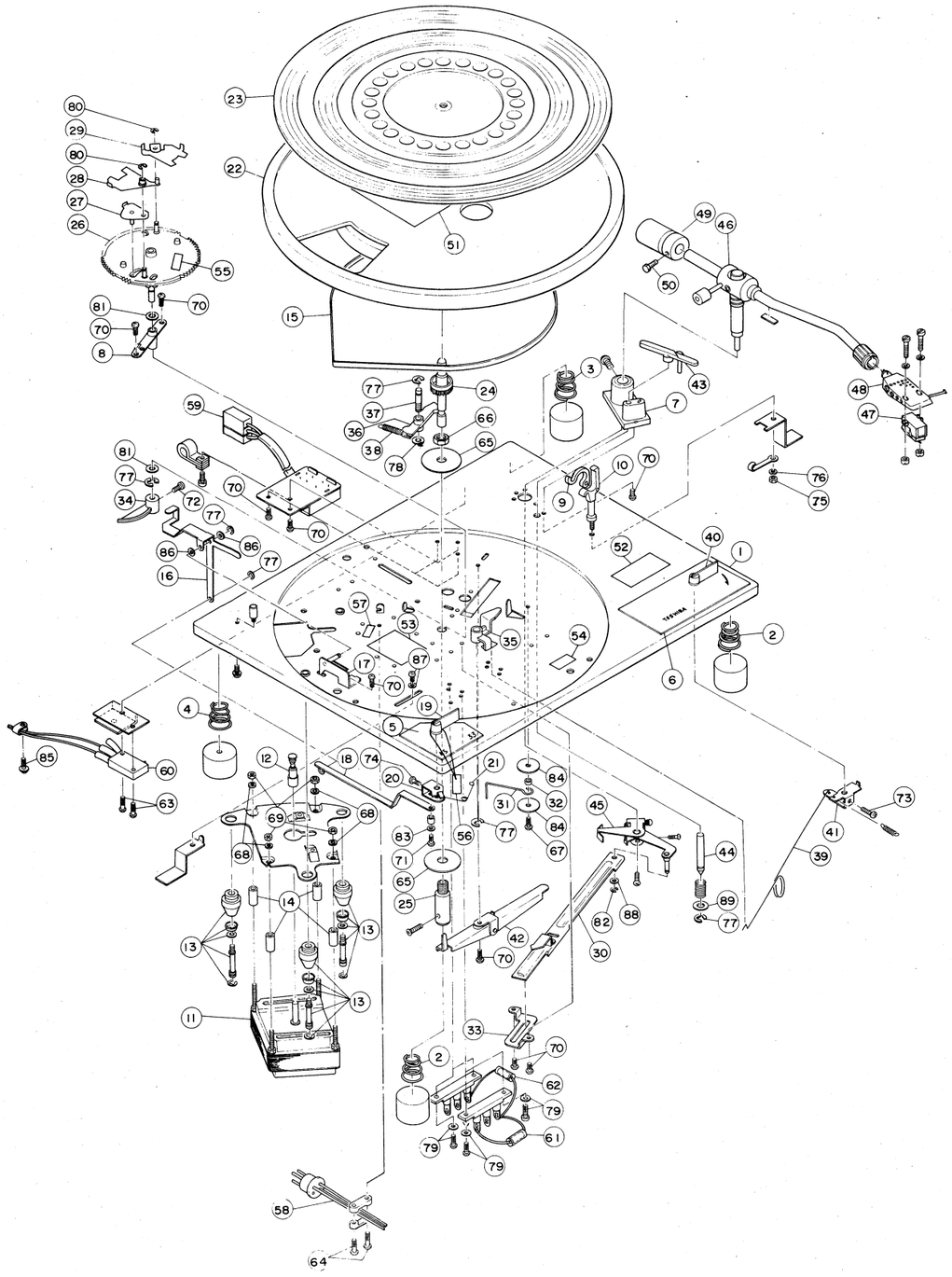
S6 MUTING: COUPLED WITH "PLAY" BUTTON.

Transformers (BOTTOM VIEW)

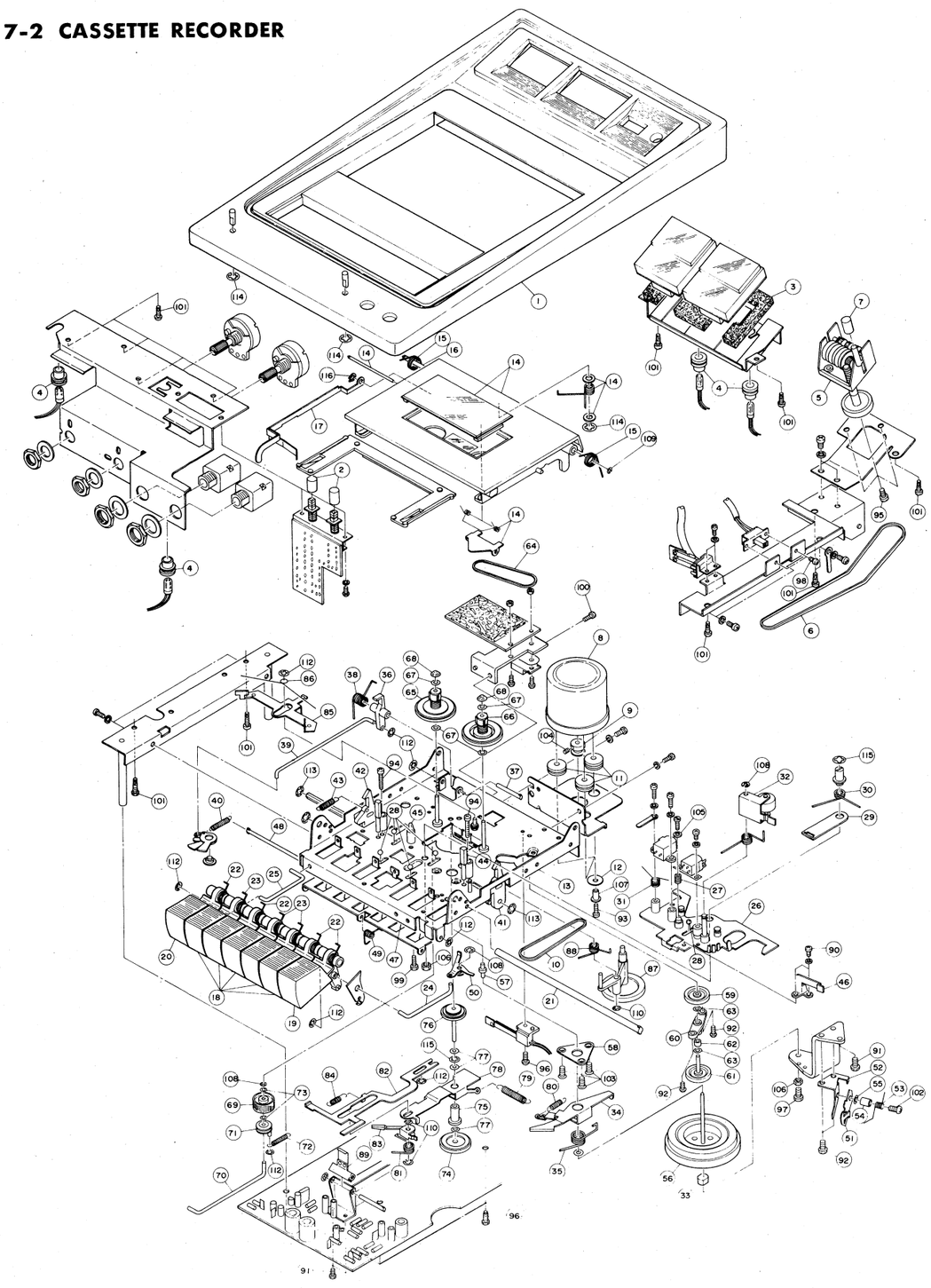


7. EXPLODED VIEW MECHANISM

7-1 RECORD PLAYER



7-2 CASSETTE RECORDER



8. EXPLODED VIEW PARTS LIST

8-1 PLAYER UNIT

REMARKS: It is not Service Parts which has not a part no.

Key No.	Part No.	description
1	20713782	Panel
2	20703811	Panel Spring A
3	20703812	Panel Spring B
4	20703813	Panel Spring C
5	20743826	Select Base
6	20743825	Reject Base
7	20735622	Pickup Stand
8	20773767	Gear Bearing
9	20738654	Arm Cramp Assembly
10	20738646	Rest Stand
11	22125434	Motor
12	20716726	Motor Pully (50Hz)
	20716727	Motor Pully (60Hz)
13	20803624	motor Attachment
14	22752823	Spacer
15	20728611	Belt
16	20743692	Belt Guide
17	20751705	Guide Bracket
18	20751706	Control Plate Assembly
19	20741708	Select Knob
20	20753774	Select Lever
21	20707692	Tortion Spring
22	20723653	Turntable
23	20723675	Table Sheet
24	20725677	Table Shaft Assembly
25	20725660	Table Bearing
26	20727626	Main Gear
27	20751704	Auto Trip
28	20751729	Auto Clutch
29	20753782	Hand Clutch
30	20751752	Auto Lever Assembly
31	20753784	Return Rod
32	20773695	Spacer
33	20746754	Ball Holder
34	20757656	Return Cam
35	20751753	Reject Lever Assembly
36	20746737	Gear Stopper
37	20763824	Stopper Shaft
38	20705601	Pull Spring
39	20707691	Reject Pole
40	20871864	Reject Knob Assembly
41	20743724	Reject Plate
42	20751707	Seasaw Lever Assembly
43	20761601	Lifting Bar
44	20763829	Lifting Shaft
45	20751774	Pickup Plate Assembly
46	20731729	Pickup Arm Assembly (Without Head Shell)
47	20781723	Cartridge (Without Stylus)
48	20736025	Head Shell
49	20731734	Main Weight
50	22701547	Decrating Nut
51	20953660	Belt Label
52	20956740	Attention Label
53	22956740	Attention Label (Cluch, Rock)
54	20968625	Hz Label
55	20778983	Attention Label (Gear)

Key No.	Part No.	Description
56	20956704	Attention Tag Card
57	20958605	Oil Label
58	22164449	4P Plug Cord
59	22164452	3P Plug Cord
60	22146335	Micro Switch
61	22330114	Metallized Paper Capacitor 0.047MF/250V
62	22563100	Composition Resistor 10 ohm, ±10%, ½W
63		T.PAN30x18MSZM2
64		T.PAN30x15MSZM2
65	20791937	WAS91x340x8MS
66	20796631	SPECIAL—NUT
67		T.PAN26x10MSZM2
68		S.WAS40SPMC
69		NUT-40BSN1
70		T.PAN30x8MSZM2
71		T.PAN26x6MSZM2
72		PAN26x8MSZM2
73		PAN30x8MSZM2
74		PAN30x15MSZM2
75		NUT-30BSN1
76		S.WAS30SPMC
77		E-Ring 31
78	20791657	WAS44x100x5TF
79	20794779	SPECIAL SCREW-W
80		E-Ring 16
81	20791667	WAS51x100x3N
82		E-Ring 20
83		WAS30BSN 1-H
84	20791967	WAS28x200x10MS
85	20794779	SPECIAL SCREW-W
86	20791657	WAS44x100x5TF
87	20795914	SPECIAL SCREW-W
88	20791786	WAS31x60x2V
89	20791869	WAS52x120x3F

8-2 CASSETTE UNIT

NOTE: The parts description in ( ) are used only for the set with the serial no. 55310001 or larger. Make attention to the serial no. when ordering.

Key No.	Part No.	Description
1	22833718	Front Panel Assembly
2	22835443	Push Button
3	22756733	Cushion
4	20881669	Bushing
5	25873603	Counter
6	25755611	Belt
7	20791759	Button Cap
8	22125444	Motor
9	25751630	Motor Pulley
10	25755621	Counter Belt
11	20881608	Cushion
12	20791625	Special Washer
13	25865691	Main Chassis Assembly
14	25822666	Cassette Holder Assembly
15	20707681	Torsion Spring
16	25724612	Holder Shaft
17	25742751	Protect Lever Assembly
18	25826651	Push Button
19	25745609	Pause Button Assembly
20	25746606	Eject Button Assembly
21	25724628	Button Shaft
22	22771703	Torsion Spring
23	22771704	Torsion Spring
24	25727606	Joint A
25	25727605	Joint C
26	25731682	Head Bracket Assembly
27	20703650	Push Spring
28	25757602	Ball Steel
29	20709621	Spring
30	20707638	Torsion Spring
31	20707650	Torsion Spring
32	25742685	Pinch Arm Assembly
33	25764608	Flywheel Thrust
(33	25764619	Flywheel Thrust)
34	25742740	FF Lever
35	22771712	Torsion Spring
36	25742604	REC Lever
37	25724622	Pin
38	20707685	Torsion Spring
39	25727603	Joint B
40	22771657	Pull Spring
41	25734603	Lock Holder A
42	25734604	Lock Holder B
43	20705675	Pull Spring
44	25732606	Cassette Guide
45	25724613	Guide Pin
46	25742608	Switch Lever
47	25742729	Lock Lever
(47	25742759	Lock Lever)
48	25724623	Pin
49	20707643	Torsion Spring
50	25742638	Lever Pause
51	25745602	Pause Clutch
52	25745604	Pause Bracket
(52	22754831	Pause Bracket)
53	20707651	Torsion Spring
54	20773618	Spacer
55	20791665	Washer (50×100×3V)
56	25751667	Flywheel
57	25725609	Flywheel Bearing Assembly
58	25734605	Bearing Holder

Key No.	Part No.	Description
59	25751607	Counter Pulley
60	25725604	Counter Bearing
61	25721618	Counter Shaft
62	20773738	Spacer
63	20791609	Washer (25×60×3N)
64	25755619	Belt
65	25751606	Reel Assembly
66	25754603	Reel Takeup Assembly
67	20791609	Washer (25×60×3N)
68	25764602	Cap
69	25752607	Rewind Idler
70	25727602	Joint D
71	25741602	Rewind Guide
72	20705683	Pull Spring
73	20791609	Washer (25×60×3N)
74	25752644	FR Idler
75	25725614	FF Bearing
76	25752642	FF Idler Assembly
77	20791609	Washer (25×60×3N)
78	25742741	FF Arm
79	22771726	Pull Spring
80	22771725	Pull Spring
81	22771713	Torsion Spring
82	25742666	Push Lever
83	25742739	Rewind Lever
84	20705684	Pull Spring
85	25743605	Brake Plate
(85	22843965	Brake Plate)
86	20707644	Torsion Spring
(86	22771753	Torsion Spring)
87	25742663	Arm Takeup Assembly
88	20707652	Torsion Spring
89	22746543	Record Lever Assembly
	22866710	Label
90		PAN20×3MSZM2
91		PAN26×5MSZM2
92		PAN26×6MSZM2
93		PAN26×10MSZM2
94		PAN26×12MSZM2
95		PAN30×5MSZM2
96		PAN30×6MSZM2
97		PAN30×10MSZM2
98		PAN20×4MSZM2
99		T-PAN26×6MSZM2
100		T-PAN30×6MSZM2
101		T-PAN30×10MSZM2
102		TRS30×8MSZM1
103		FLT26×5MSZM2
104		S-FF23×4MSZM2
105		WAS20BS
106		NUT30
107		EYELET30×8
108		E-Ring, 15
109		E-Ring, 20
110		E-Ring, 24
111		CS-Ring, 15
112		CS-Ring, 20
113		CS-Ring, 30
114		CS-Ring, 40
115		CS-Ring, 50
116		OUT-Ring, 30

9. PARTS LIST

RESISTORS ..... ＊All fixed resistor are ¼W, ±10%, Solid resistor unless otherwise noted. (RF CIRCUIT)
＊All fixed resistor are ¼W, ±5%, carbon resistor unless otherwise noted.

CAPACITORS ..... ＊D: ±0.5PF, J: ±5%, K: ±10%, M: ±20%, P: +100, −0%, Z: +80, −20%

Key No.	Part No.	Description
RADIO UNIT		
	22130272	Radio P.C. Board Assembly
(RF BLOCK)		
TR101		Transistor, 2SK19-GR
TR102		Transistor, 2SC785-R
D101		Diode, 1S1555V
L101	22292053	Antenna Coil, FM
L102	22294096	RF Coil, FM
L103	22294211	RF Coil, FM
L104	22291009	Choke Coil, FM
L105	22294164	RF Coil, FM
IT201	22265554	IFT, FM
VC	22308272	Variable Capacitor
Capacitors		
C101	22361200	Ceramic 20PF, J
C102	22362201	Ceramic 200PF, K
C103	22343202	Ceramic 0.002MF, M
C104	22343102	Ceramic 0.001MF, M
C105	22361150	Ceramic 15PF, J
C106	22361309	Ceramic 3PF, D
C107	22361509	Ceramic 5PF, D
C108	22361300	Ceramic 30PF, J
C109	22362201	Ceramic 200PF, K
C110	22343202	Ceramic 0.002MF, M
C111	22361809	Ceramic 8PF, D
C112	22343102	Ceramic 0.001MF, M
C113	22341203	Ceramic 0.02MF, P
C114	22341203	Ceramic 0.02MF, P
Resistors		
R101	22561105	1M ohm
R102	22561101	100 ohm
R103	22561101	100 ohm
R104	22561222	2.2 K ohm
R105	22561394	390 K ohm
R106	22561152	1.5 K ohm
R107	22561472	4.7 K ohm
R108	22561222	2.2 K ohm
(IF BLOCK)		
TR103		Transistor, 2SC380-R
TR201		Transistor, 2SC380-O
TR202		Transistor, 2SC380-O
TR203		Transistor, 2SC380-R
D201		Diode, 1S1555V
D202	22115201	Diode, 20A90
D203	22115201	Diode, 20A90

Key No.	Part No.	Description
D204	22115201	Diode, 20A90
L106	22242425	Antenna Coil Assembly
L107	22245186	OSC Coil, MW
L108	22205025	OSC Coil, LW
IT202	22265562	IFT, FM
IT203	22267276	IFT, FM
IT204	22267272	IFT, FM
IT205	22264565	IFT, AM
IT206	22264566	IFT, AM
IT207	22266228	IFT, AM
TC2	22309036	Trimmer Capacitor
Capacitors		
C116	22361150	Ceramic 15PF, J
C117	22341203	Ceramic 0.02MF, P
C118	22391301	Polyplopylene 300PF, J
C119	22372682	Mylar 0.0068MF, K
C120	22361809	Ceramic 8PF, D
C121	22381101	Polystyrene 100PF, J
C122	22372223	Mylar 0.022MF, K
C123	22361300	Ceramic 30PF, J
C201	22341103	Ceramic 0.01MF, P
C202	22341203	Ceramic 0.02MF, P
C203	22341103	Ceramic 0.01MF, P
C204	22341203	Ceramic 0.02MF, P
C205	22361309	Ceramic 3PF, D
C206	22361209	Ceramic 2PF, D
C207	22341203	Ceramic 0.02MF, P
C208	22342403	Ceramic 0.04MF, Z
C209	22341203	Ceramic 0.02MF, P
C210	22445100	Electrolytic 10MF/16WV
C211	22361209	Ceramic 2PF, D
C212	22341203	Ceramic 0.02MF, P
C213	22361409	Ceramic 4PF, D
C214	22372473	Mylar 0.047MF, K
C215	22341203	Ceramic 0.02MF, P
C216	22341203	Ceramic 0.02MF, P
C217	22372103	Mylar 0.01MF, K
C218	22372103	Mylar 0.01MF, K
C219	22341203	Ceramic 0.02MF, P
C220	22362301	Ceramic 300PF, K
C221	22362301	Ceramic 300PF, K
C222	22446479	Electrolytic 4.7MF/25WV
C223	22372472	Mylar 0.0047MF, K
C224	22372223	Mylar 0.022MF, K
C225	22372473	Mylar 0.047MF, K
C226	22372683	Mylar 0.068MF, K
C227	22362301	Ceramic 300PF, K
C247	22341203	Ceramic 0.02MF, P
C248	22446101	Electrolytic 100MF/25WV
C249	22446221	Electrolytic 220MF/25WV

Key No.	Part No.	Description
Resistors		
R109	22545683	68K ohm
R110	22545123	12K ohm
R111	22545222	2.2K ohm
R112	22545334	330K ohm
R201	22545103	10K ohm
R202	22545562	5.6K ohm
R203	22545821	820 ohm
R204	22545102	1K ohm
R205	22545102	1K ohm
R206	22545471	470 ohm
R207	22545102	1K ohm
R208	22545563	56K ohm
R209	22545471	470 ohm
R210	22545221	220 ohm
R211	22545101	100 ohm
R212	22545472	4.7K ohm
R213	22545392	3.9K ohm
R214	22545220	22 ohm
R215	22545682	6.8K ohm
R216	22545223	22K ohm
R217	22545471	470 ohm
R218	22545221	220 ohm
R220	22545102	1K ohm
R221	22545102	1K ohm
R222	22545562	5.6K ohm
R223	22545562	5.6K ohm
R224	22545102	1K ohm
R225	22545393	39K ohm
R226	22545333	33K ohm
R227	22545561	560 ohm
R228	22545823	82K ohm
R229	22545562	5.6K ohm
R252	22545102	1K ohm
R253	22563821	820 ohm ±10%, ½W, Solid
R255	22545153	15K ohm
R256	22545683	68K ohm
CF201	22153018	CF Filter
(MPX BLOCK)		
TR204		Transistor, 2SC373
TR205		Transistor, 2SC373
TR206		Transistor, 2SC373
D205	22115201	Diode, 20A90
D206	22115201	Diode, 20A90
D207	22115201	Diode, 20A90
D208	22115201	Diode, 20A90
D209	22115201	Diode, 20A90
D210	22115201	Diode, 20A90
MXT201	22232159	MPX, Coil
MXT202	22232141	MPX, Coil
Capacitors		
C228	22445100	Electrolytic 10MF/16WV
C229	22445470	Electrolytic 47MF/16WV

Key No.	Part No.	Description
C230	22372393	Mylar 0.039MF, K
C231	22391472	Polyplopylene 4700PF, J
C232	22446479	Electrolytic 4.7MF/25WV
C233	22341203	Ceramic 0.02MF, P
C234	22372393	Mylar, 0.039MF, K
C235	22445100	Electrolytic 10MF/16WV
C236	22372393	Mylar, 0.039MF, K
C237	22391472	Polyplopylene 4700PF, J
C238	22372102	Mylar, 0.001MF, K
C239	22372102	Mylar, 0.001MF, K
C240	22372332	Mylar, 0.0033MF, K
C241	22372182	Mylar, 0.0018MF, K
C242	22372182	Mylar, 0.0018MF, K
C245	22372473	Mylar, 0.047MF, K
C246	22372473	Mylar, 0.047MF, K
C250	22447220	Electrolytic 22MF/35WV
Resistors		
R230	22545564	560K ohm
R231	22545474	470K ohm
R232	22545471	470 ohm
R233	22658269	Semi-Fixed Resistor 500 ohm
R234	22545471	470 ohm
R235	22545102	1K ohm
R236	22545182	1.8K ohm
R237	22545562	5.6K ohm
R238	22545473	47K ohm
R239	22545102	1K ohm
R240	22545123	12K ohm
R241	22563391	390 ohm ±10%, ½W, Solid
R242	22545103	10K ohm
R243	22545683	68K ohm
R244	22545682	6.8K ohm
R245	22545682	6.8K ohm
R246	22545682	6.8K ohm
R247	22545682	6.8K ohm
R248	22545104	100K ohm
R249	22545104	100K ohm
R250	22545224	220K ohm
R251	22545224	220K ohm
R254	22563390	39 ohm ±10%, ½W, Solid
R257	22545224	220K ohm
AF UNIT		
	22136435	AF P.C. Board Assembly
(AUDIO BLOCK)		
IC301		IC, TA7122AP-A or (B)
IC302		IC, TA7122AP-A or (B)
Capacitors		
C301	22446479	Electrolytic 4.7MF/25WV
C302	22446479	Electrolytic 4.7MF/25WV
C303	22362500	Ceramic 50PF, K
C304	22362500	Ceramic 50PF, K

Key No.	Part No.	Description
C305	22445470	Electrolytic 47MF/16WV
C306	22445470	Electrolytic 47MF/16WV
C307	22447100	Electrolytic 10MF/35WV
C308	22447100	Electrolytic 10MF/35WV
C309	22371183	Mylar 0.018MF, J
C310	22371183	Mylar 0.018MF, J
C311	22371472	Mylar 0.0047MF, J
C312	22371472	Mylar 0.0047MF, J
C313	22447100	Electrolytic 10MF/35WV
C314	22447221	Electrolytic 220MF/35WV
C315	22362501	Ceramic 500PF, K
C316	22362501	Ceramic 500PF, K
Resistors		
R301	22545222	2.2K ohm
R302	22545222	2.2K ohm
R303	22545104	100K ohm
R304	22545104	100K ohm
R305	22545474	470K ohm
R306	22545474	470K ohm
R307	22545154	150K ohm
R308	22545154	150K ohm
R309	22545183	18K ohm
R310	22545183	18K ohm
R311	22545182	1.8K ohm
R312	22545182	1.8K ohm
R313	22545331	330 ohm
R315	22545473	47K ohm
R317	22545473	47K ohm
R318	22545473	47K ohm
R319	22545562	5.6K ohm
R320	22545562	5.6K ohm
R321	22545104	100K ohm
R322	22545104	100K ohm
R323	22545104	100K ohm
R324	22545104	100K ohm
R325	22545393	39K ohm
R326	22545393	39K ohm
R327	22545123	12K ohm
R328	22545123	12K ohm
R329	22545123	12K ohm
R330	22545123	12K ohm
R331	22545104	100K ohm
R332	22545104	100K ohm
(TONE BLOCK)		
TR401		Transistor, 2SC732-GR
TR402		Transistor, 2SC732-GR
Capacitors		
C401	22448109	Electrolytic 1MF/50WV
C402	22448109	Electrolytic 1MF/50WV
C403	22445100	Electrolytic 10MF/16WV
C404	22445100	Electrolytic 10MF/16WV
C405	22372223	Mylar 0.022MF, K
C406	22372223	Mylar 0.022MF, K

Key No.	Part No.	Description
C407	22372222	Mylar 0.0022MF, K
C408	22372222	Mylar 0.0022MF, K
C409	22372104	Mylar 0.1MF, K
C410	22372104	Mylar 0.1MF, K
C411	22372103	Mylar 0.01MF, K
C412	22372103	Mylar 0.01MF, K
C413	22372473	Mylar 0.047MF, K
C414	22372473	Mylar 0.047MF, K
C415	22362501	Ceramic 500PF, K
C416	22362501	Ceramic 500PF, K
C419	22447221	Electrolytic 220MF/35WV
C420	22447221	Electrolytic 220MF/35WV
Resistors		
R401	22545564	560K ohm
R402	22545164	560K ohm
R403	22545125	1.2M ohm
R404	22545125	1.2M ohm
R405	22545391	390 ohm
R406	22545391	390 ohm
R407	22545822	8.2K ohm
R408	22545822	8.2K ohm
R409	22545333	33K ohm
R410	22545333	33K ohm
R411	22545272	2.7K ohm
R412	22545272	2.7K ohm
R413	22545122	1.2K ohm
R414	22545122	1.2K ohm
R415	22545123	12K ohm
R416	22545123	12K ohm
R417	22545823	82K ohm
R418	22545823	82K ohm
R419	22545225	2.2M ohm
R420	22545225	2.2M ohm
R421	22545471	470 ohm
R422	22563331	330 ohm ±10%, ½W, Solid
R423	22545223	22K ohm
R424	22545223	22K ohm
R425	22545123	12K ohm
R426	22545123	12K ohm
R427	22545332	3.3K ohm
R428	22545332	3.3K ohm
(AF BLOCK)		
TR501		Transistor, 2SA495-GR
TR502		Transistor, 2SA495-GR
TR503		Transistor, 2SC734-Y
TR504		Transistor, 2SC734-Y
TR505		Transistor, 2SA661-Y
TR506		Transistor, 2SA661-Y
TR507		Transistor, 2SC1166-Y
TR508		Transistor, 2SC1166-Y
TR509		Transistor, 2SD234-O
TR510		Transistor, 2SD234-O
TR511		Transistor, 2SD234-O
TR512		Transistor, 2SD234-O

Key No.	Part No.	Description
D501	22692023	Varistor, MV-12
D502	22692023	Varistor, MV-12
D503	22692014	Varistor, MV-1
D504	22692014	Varistor, MV-1
Capacitors		
C501	22402017	Aluminum 0.47MF/25WV
C502	22402017	Aluminum 0.47MF/25WV
C503	22362501	Ceramic 500PF,K
C504	22362501	Ceramic 500PF,K
C505	22445101	Electrolytic 100MF/16WV
C506	22445101	Electrolytic 100MF/16WV
C507	22362501	Ceramic 500PF, K
C508	22362501	Ceramic 500PF, K
C509	22361200	Ceramic 20PF, J
C510	22361200	Ceramic 20PF, J
C511	22443101	Electrolytic 100MF/10WV
C512	22443101	Electrolytic 100MF/10WV
C513	22445101	Electrolytic 100MF/16WV
C514	22445101	Electrolytic 100MF/16WV
C515	22372683	Mylar 0.068MF, K
C516	22372683	Mylar 0.068MF, K
C517	22446102	Electrolytic 1000MF/25WV
C518	22446102	Electrolytic 1000MF/25WV
C519	22448470	Electrolytic 47MF/50WV
C520	22341203	Ceramic 0.02MF, P
Resistors		
R501	22545182	18K ohm
R502	22545182	18K ohm
R503	22545184	180K ohm
R504	22545184	180K ohm
R505	22545274	270K ohm
R506	22545274	270K ohm
R507	22545332	3.3K ohm
R508	22545332	3.3K ohm
R509	22545680	68 ohm
R510	22545680	68 ohm
R511	22545123	12K ohm
R512	22545123	12K ohm
R513	22545221	220 ohm
R514	22545221	220 ohm
R517	22545222	2.2K ohm
R518	22545222	2.2K ohm
R519	22545152	1.5K ohm
R520	22545152	1.5K ohm
R521	22545221	220 ohm
R522	22545221	220 ohm
R523	22545221	220 ohm
R524	22545221	220 ohm
R525	22500056	0.5 ohm, ±10%, 1W, Cemented
R526	22500056	0.5 ohm, ±10%, 1W, Cemented
R527	22500056	0.5 ohm, ±10%, 1W, Cemented
R528	22500056	0.5 ohm, ±10%, 1W, Cemented
R529	22563100	10 ohm, ±10%, ½W, Solid
R530	22563100	10 ohm, ±10%, ½W, Solid
R531	22545683	68K ohm

Key No.	Part No.	Description
R533	22658276	Semi-Fixed Resistor 200 ohm
R534	22658276	Semi-Fixed Resistor 200 ohm
R535	22563331	330 ohm, ±10%, ½W, Solid
R536	22563331	330 ohm, ±10%, ½W, Solid
R537	22500085	8 ohm, ±10%, 5W, Cemented
R538	22500085	8 ohm, ±10%, 5W, Cemented
R539	22500086	8 ohm, ±10%, 15W, Cemented
R541	22563220	22 ohm, ±10%, ½W, Solid
R542	22563220	22 ohm, ±10%, ½W, Solid
R543	22500085	8 ohm, ±10%, 5W, Cemented
R544	22500085	8 ohm, ±10%, 5W, Cemented
	20881718	Mica Insulator
	22118170	Transistor Holder
SUPPLY BLOCK		
	22138212	Supply P.C. Board Ass'y
TR901	22114238	Transistor, 2SC1383-R
(TR901	22114292	Transistor, 2SC1383-Q)
(TR901	22114319	Transistor, 2SC1383-P)
D901		Diode, 1S1885
D902		Diode, 1S1885
D903		Diode, 1S1885
D904		Diode, 1S1885
D905		Diode, 1S1885
D906		Diode, 1S1885
D907		Diode, 1S1885
D908		Diode, 1S1885
Capacitors		
C901	22344103	Ceramic 0.01MF, P
C902	22344103	Ceramic 0.01MF, P
C903	22344103	Ceramic 0.01MF, P
C904	22344103	Ceramic 0.01MF, P
C905	22458222	Electrolytic 2200MF/50WV
C907	22445102	Electrolytic 1000MF/16WV
C908	22447471	Electrolytic 470MF/35WV
C910	22446101	Electrolytic 100MF/25WV
C911	22446101	Electrolytic 100MF/25WV
C912	22344103	Ceramic 0.01MF, P
Resistors		
R903	22563220	22 ohm, ±10%, ½W, Solid
R904	22545122	1.2K ohm
(R904	22545821	820 ohm)
(R904	22545681	680 ohm)
	22118027	Radiator
F901	22144191	Fuse, 2A
F902	22144191	Fuse, 2A
F903	22144197	Fuse, 1.6A
F904	22144197	Fuse, 1.6A

Key No.	Part No.	Description
		PILOT LAMP BLOCK
	22130274	Pilot Lamp P.C. Board Assembly
PL1	22113382	Pilot Lamp (Stereo Indicator)
PL2	22113327	Pilot Lamp (Dial Lighting)
PL3	22113327	Pilot Lamp (Dial Lighting)
PL4	22113327	Pilot Lamp (Dial Lighting)
	22648201	Variable Resistor 100K ohm
	22640201	Variable Resistor 100K ohm
	22650203	Variable Resistor 100K ohm
	22124968	FM Antenna
		ELECTRICAL PARTS
	22130273	Switch P.C. Board Assembly
	22213752	Power Transformer
	22176286	Power Cord, Europe
	22166437	Power Cord, SEMKO
	22176438	Power Cord, Australia
	22167276	Socket, 4P
	22164257	Plug Volt
	22167260	Socket Volt
	22167244	DIN Socket (FM Antenna)
	22167245	DIN Socket (AM Antenna)
	22163299	US Jack
	22162059	Terminal, 4P
	22146412	Push Switch (Power)
	22163276	Jack (6.5ST)
	22146354	Push Switch (Band Select)
		CABINET PARTS
	22821852	Cabinet Assembly
	22821899	Cabinet Assembly (Silver)
	20791921	Special Washer
	22872512	Hinge
	20795940	Special Screw, 4×15
	22701545	Special Screw, 5×15
	22833701	Mesh Plate
	22874509	Foot
	22833717	Front Panel Assembly
	20847715	Dust Cover
	22754802	Hinge Holder
	22754803	Cover Holder
	22835442	Tuning Knob
	22835441	Volume Knob
	22835499	Push Button
	22754799	Jack Bracket
	22705506	Special Rivet
	22837743	Dial Cover
	22847793	Dial Plate
	22741594	Pointer Assembly
	22742550	Drum
	22771660	Pull Spring
	22749567	Tuning Shaft

Key No.	Part No.	Description
	20749672	Select Cover
	20881680	Bushing (Power Cord)
	22756783	Bushing (Power Cord), SEMKO
	22756639	Bushing (Bar Antenna)
	22756730	Cushion (Lead Lamp)
		CASSETTE PRE AMP. PARTS
	22136436	AF P.C. Board Assembly
	22130275	Switch P.C. Board Assembly
TR601	22114333	Transistor, 2SC 1327-S
TR602	22114333	Transistor, 2SC 1327-S
TR603	22114333	Transistor, 2SC 1327-S
TR604	22114333	Transistor, 2SC 1327-S
TR605	22114225	Transistor, 2SC 828-Q
TR606	22114225	Transistor, 2SC 828-Q
TR607	22114225	Transistor, 2SC 828-Q
TR608	22114225	Transistor, 2SC 828-Q
TR609	22114225	Transistor, 2SC 828-Q
TR610	22114225	Transistor, 2SC 828-Q
TR611	22114225	Transistor, 2SC 828-Q
TR612	22114225	Transistor, 2SC 828-Q
TR613	22114204	Transistor, 2SC 828-S
TR614	22114204	Transistor, 2SC 828-S
TR615	22114225	Transistor, 2SC 828-Q
TR616	22114225	Transistor, 2SC 828-Q
TR701	22114292	Transistor, 2SC 1383-Q
D601	22115201	Diode, 20A90
D602	22115201	Diode, 20A90
D603		Diode, 1S1555V
D604		Diode, 1S1555V
D605		Diode, 1S1555V
D606		Diode, 1S1555V
D607		Diode, 1S1555V
D608		Diode, 1S1555V
D609		Diode, 1S1555V
D610		Diode, 1S1555V
D612		Diode, 1S1555V
D613		Diode, 1S1555V
D614		Diode, 1S1555V
D701		Diode, 1S1555V
D702	22692015	Diode, Varistor, MV-11
L601	22201004	Choke Coil, AF
L602	22201004	Choke Coil, AF
L603	22211164	Choke Coil, AF
L604	22211164	Choke Coil, AF
L701	22215082	OSC Coil, AF
T601	22216234	Output Transformer
T602	22216234	Output Transformer
Capacitors		
C601	22372122	Mylar 0.0012MF, K
C602	22372122	Mylar 0.0012MF, K
C603	22372332	Mylar 0.0033MF, K
C604	22342332	Mylar 0.0033MF, K

Key No.	Part No.	Description
C605	22446479	Electrolytic 4.7MF/25WV
C606	22446479	Electrolytic 4.7MF/25WV
C607	22445100	Electrolytic 10MF/16WV
C608	22445100	Electrolytic 10MF/16WV
C609	22446479	Electrolytic 4.7MF/25WV
C610	22446479	Electrolytic 4.7MF/25WV
C611	22372333	Mylar 0.033MF, K
C612	22372333	Mylar 0.033MF, K
C613	22361300	Ceramic 30PF, J
C614	22361300	Ceramic 30PF, J
C615	22445100	Electrolytic 10MF/16WV
C616	22445100	Electrolytic 10MF/16WV
C617	22445470	Electrolytic 47MF/16WV
C618	22445470	Electrolytic 47MF/16WV
C619	22372822	Mylar 0.0082MF, K
C620	22372822	Mylar 0.0082MF, K
C621	22392301	Polyplopylene 300PF, K
C622	22392301	Polyplopylene 300PF, K
C623	22372683	Mylar 0.068MF, K
C624	22372683	Mylar 0.068MF, K
C625	22445101	Electrolytic 100MF/16WV
C626	22445101	Electrolytic 100MF/16WV
C627	22445100	Electrolytic 10MF/16WV
C628	22445100	Electrolytic 10MF/16WV
C629	22372222	Mylar 0.0022MF, K
C630	22372222	Mylar 0.0022MF, K
C631	22445470	Electrolytic 47MF/16WV
C632	22445470	Electrolytic 47MF/16WV
C633	22446479	Electrolytic 4.7MF/25WV
C634	22446479	Electrolytic 4.7MF/25WV
C635	22446479	Electrolytic 4.7MF/25WV
C636	22446479	Electrolytic 4.7MF/25WV
C637	22372153	Mylar 0.0015MF, K
C638	22372153	Mylar 0.0015MF, K
C639	22372102	Mylar 0.001MF, K
C640	22372102	Mylar 0.001MF, K
C641	22392471	Polyplopylene 470PF, K
C642	22392471	Polyplopylene 470PF, K
C643	22446479	Electrolytic 4.7MF/25WV
C644	22446479	Electrolytic 4.7MF/25WV
C645	22372223	Mylar 0.022MF, K
C646	22372223	Mylar 0.022MF, K
C647	22372332	Mylar 0.0033MF, K
C648	22372332	Mylar 0.0033MF, K
C649	22392471	Polyplopylene 470PF, K
C650	22392471	Polyplopylene 470PF, K
C651	22372182	Mylar 0.0018MF, K
C652	22372182	Mylar 0.0018MF, K
C653	22372223	Mylar 0.022MF, K
C654	22372223	Mylar 0.022MF, K
C655	22372222	Mylar 0.0022MF, K
C656	22372222	Mylar 0.0022MF, K
C657	22392681	Polyplopylene 680PF, K
C658	22392681	Polyplopylene 680PF, K
C659	22372223	Mylar 0.022MF, K
C660	22372223	Mylar 0.022MF, K
C661	22372223	Mylar 0.022MF, K

Key No.	Part No.	Description
C662	22372223	Mylar 0.022MF, K
C663	22372103	Mylar 0.01MF, K
C664	22372103	Mylar 0.01MF, K
C665	22446479	Electrolytic 4.7MF/25WV
C666	22446479	Electrolytic 4.7MF/25WV
C667	22445221	Electrolytic 220MF/16WV
C701	22445101	Electrolytic 100MF/16WV
C702	22372222	Mylar 0.0022MF, K
C703	22445221	Electrolytic 220MF/16WV
C704	22372223	Mylar 0.022MF, K
C705	22380024	Polystyrene 8200PF, J
C706	22380023	Polystyrene 820PF, J
C707	22362500	Ceramic 50PF, K
C708	22362201	Ceramic 200PF, K
C709	22362500	Ceramic 50PF, K
C710	22362201	Ceramic 200PF, K
C711	22380023	Polystyrene 820PF, J
C804	22445101	Electrolytic 100MF/16WV
VR603	22658214	Semi-Fixed Resistor 50K ohm
VR604	22658214	Semi-Fixed Resistor 50K ohm
VR605	22658211	Semi-Fixed Resistor 5K ohm
VR606	22658211	Semi-Fixed Resistor 5K ohm
VR607	22658211	Semi-Fixed Resistor 5K ohm
VR608	22658211	Semi-Fixed Resistor 5K ohm
VR609	22658211	Semi-Fixed Resistor 5K ohm
VR610	22658211	Semi-Fixed Resistor 5K ohm
VR701	22658215	Semi-Fixed Resistor 100K ohm
VR702	22658215	Semi-Fixed Resistor 100K ohm
VR703	22658215	Semi-Fixed Resistor 100K ohm
VR704	22658215	Semi-Fixed Resistor 100K ohm
Resistors		
R601	22545222	2.2K ohm
R602	22545222	2.2K ohm
R603	22545100	10 ohm
R604	22545100	10 ohm
R605	22545473	47K ohm
R606	22545473	47K ohm
R607	22545102	1K ohm
R608	22545102	1K ohm
R609	22545104	100K ohm
R610	22545104	100K ohm
R611	22545104	100K ohm
R612	22545104	100K ohm
R613	22545102	1K ohm
R614	22545102	1K ohm
R615	22545221	220 ohm
R616	22545221	220 ohm
R617	22545273	27K ohm
R618	22545273	27K ohm
R619	22545680	68 ohm
R620	22545680	68 ohm
R621	22545331	330 ohm
R622	22545331	330 ohm
R623	22545822	8.2K ohm
R624	22545822	8.2K ohm

Key No.	Part No.	Description
R625	22545681	680 ohm
R626	22545681	680 ohm
R627	22545122	1.2K ohm
R628	22545122	1.2K ohm
R629	22545224	220K ohm
R630	22545224	220K ohm
R631	22545103	10K ohm
R632	22545103	10K ohm
R633	22545682	6.8K ohm
R634	22545682	6.8K ohm
R635	22545273	27K ohm
R636	22545273	27K ohm
R637	22545563	56K ohm
R638	22545563	56K ohm
R639	22545102	1K ohm
R640	22545102	1K ohm
R641	22545823	82K ohm
R642	22545823	82K ohm
R643	22545822	8.2K ohm
R644	22545822	8.2K ohm
R645	22545101	100 ohm
R646	22545101	100 ohm
R647	22545392	3.9K ohm
R648	22545392	3.9K ohm
R649	22545681	680 ohm
R650	22545681	680 ohm
R651	22545100	10 ohm
R652	22545100	10 ohm
R653	22545181	180 ohm
R654	22545181	180 ohm
R655	22545102	1K ohm
R656	22545102	1K ohm
R657	22545472	4.7K ohm
R658	22545472	4.7K ohm
R659	22545563	56K ohm
R660	22545563	56K ohm
R661	22545683	68K ohm
R662	22545683	68K ohm
R663	22545563	56K ohm
R664	22545563	56K ohm
R665	22545681	680 ohm
R666	22545681	680 ohm
R667	22545681	680 ohm
R668	22545681	680 ohm
R669	22545102	1K ohm
R670	22545102	1K ohm
R671	22545822	8.2K ohm
R672	22545822	8.2K ohm
R673	22545102	1K ohm
R674	22545102	1K ohm
R675	22545334	330K ohm
R676	22545334	330K ohm
R677	22545104	100K ohm
R678	22545104	100K ohm
R679	22545182	1.8K ohm
R680	22545182	1.8K ohm
R681	22545334	330K ohm

Key No.	Part No.	Description
R682	22545334	330K ohm
R683	22545223	22K ohm
R684	22545223	22K ohm
R685	22545681	680 ohm
R686	22545681	680 ohm
R687	22545562	5.6K ohm
R688	22545562	5.6K ohm
R689	22545681	680 ohm
R690	22545681	680 ohm
R691	22545124	120K ohm
R692	22545124	120K ohm
R693	22545273	27K ohm
R694	22545273	27K ohm
R695	22545563	56K ohm
R696	22545563	56K ohm
R697	22545330	33 ohm
R701	22545100	10 ohm
R702	22685151	220 ohm ±10%, 3W, Wire Wound N
R703	22545122	1.2K ohm
R704	22545820	82 ohm
R705	22545229	2.2 ohm
R706	22545100	10 ohm
R707	22545102	1K ohm
ELECTRICAL PARTS		
	22118027	Radiator
RPH101	22217240	Record/Playback Head
RPH102	22217240	Record/Playback Head
EH201	22218166	Erase Head
S1	22146496	Slide Switch (Recording)
S2	22146496	Slide Switch (Recording)
S3	22140304	Push Switch
S4	22146470	Slide Switch (Beat Proof)
S5	22145891	Leaf Switch (Running)
S6	22145902	Leaf Switch (Muting)
PL6	22113328	Pilot Lamp (0.04A, 9V, Running)
PL7	22113330	Pilot Lamp (0.04A, 9V, Crome)
PL8	22113329	Pilot Lamp (0.085A, 9V, Meter)
PL9	22113329	Pilot Lamp (0.085A, 9V, Meter)
ME601	22104247	Level Meter
ME602	22104247	Level Meter
J3	22163304	Jack (Microphone)
J4	22163304	Jack (Microphone)
J5	22164455	3P Plug Cord (Short)
J6	22164454	3P Plug Cord (Long)
J7	22164453	4P Plug Cord
VR601	22644200	Variable Resistor 50K ohm
VR602	22644200	Variable Resistor 50K ohm
ACCESSORIES		
	20971652	45 Adaptor
	22952930	Owner's Manual
	22154157	Microphone

TOSHIBA

MANUFACTURED BY
TOKYO SHIBAURA ELECTRIC CO., LTD.
2-1, GINZA 5CHOME, CHUO-KU TOKYO 104, JAPAN
CABLE:TOSIBAGNZ TOKYO, TELEX NO.: J24681, J24682, J24683

PART NO. 22955671A (S) FEBRUARY '76 PRINTED IN JAPA